

# **THE DRAGONFLIES AND DAMSELFLIES OF NORTH CAROLINA**

## **FOURTH APPROXIMATION**

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This material is a fourth approximation account of the species of dragonflies and damselflies of North Carolina. It is not considered to be a "publication". It is intended to be a guide or "handbook" for odonate enthusiasts, as there is, as yet, no published book on this group of insects of North Carolina. The bulk of the information is based on data for each species that has been compiled over a several decade period by the late Duncan Cuyler; most of these data are based on specimens. (Cuyler's entire specimen collection is housed at the Florida State Collection of Arthropods/International Odonata Research Institute in Gainesville, FL.) In 2009, the third author (Tom Howard) created the Dragonflies and Damselflies of North Carolina website <<http://ncparks.gov/odes>>, which has an input function that allows biologists to enter their own observational data.

The county distribution maps in this document (and on the website) represent a mix of specimens, photos, and unconfirmed sight records. Until this current Fourth Approximation, Cuyler's county records were transformed into an Excel file by Steve Roble (Virginia Natural Heritage Program), and this file was sent to Howard, who converted these data into the county range maps. However, in fall 2012, the authors received an Excel file from Bill Mauffray, the curator of odonates at the Florida museum, that contains all of the roughly 17,900 records of odonate specimens there that have been collected in North Carolina! This file contains not only the species and county, but also the date, exact location, and number of specimens of the species collected on that date. Thus, with this Fourth Approximation, we finally have meaningful flight charts (one chart for each of the three physiographic provinces) on the PDF pages, with a respectful number of date records for most species, many new earliest dates and latest dates, and many new high counts. (Note – high counts of these specimen data, as shown on many of the species account PDF's, simply are the number of specimens collected on that date; the collector might well have seen many more individuals that day.) Most of these specimen records show as light green colors on the website county maps, as the bulk of the records were taken more than 20 years ago. Newer records are indicated on the maps on the website by different color shadings and symbols (on the PDF maps).

The common and scientific names follow those of "A Checklist of North American Odonata" (2012), except that the damselflies are moved behind the dragonflies in our document. Thus, the families (ending in "idae") are arranged in taxonomic order from most primitive to most "recent"; and, within each family, the sequence is simply alphabetical, by both genera and by species (within a given genus). Information about the life history of the state's 133 confirmed species of dragonflies (plus six others reported in the literature) – based in part on the field experience of the senior author (LeGrand), and in part on three excellent and recent publications, by Dunkle (2000), Beaton (2007), and Paulson (2011) – is given under several headings on each species account.

Another major feature of this Fourth Approximation is the near "complete" species accounts for all damselflies; until this year, most accounts had not been written. LeGrand wrote nearly all of these, with a few written by Corey; however, because of LeGrand's unfamiliarity with the majority of damselflies, the Behavior section was left un-written, and thus this field does not appear for most of these damselfly species accounts. However, it is hoped that LeGrand, Corey, or others can fill out this section for all damselfly species before the next approximation, based on their field experience; otherwise, material written in reference books will be summarized.

One purpose of this document is to encourage the reporting of sightings or other records of rare species to the Natural Heritage Program. This Program keeps computerized records on these rare species, in hopes of arranging protection for them. Rare species are noted by the "NC Status" and "US Status" lines beneath each species' range; see Page vi of this document for rarity codes.

Much still remains to be learned about the distributions and life histories of the 186 species of odonates (133 dragonflies and 53 damselflies) in the state. Many species with 20 or more county records have only a handful dates available, and some species with a dozen county records or more have very few flight dates for them. Geographically, the dot maps have many holes, even for common species. Coverage of the state by Cuyler (mostly pre-1990), though somewhat thorough, was probably not uniform; and certainly coverage in recent years has not been uniform, as most

field workers tend to be clustered in the Piedmont, especially in the Triangle area. Especially needing work are mountain counties, in particular for clubtail (Family Gomphidae) species, and most Coastal Plain counties, particularly for damselflies. From the list in Appendix B, it is easy to pick out the counties that have had little or no field work.

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- Walton, R.K., and R.A. Forster. 1997. *Common Dragonflies of the Northeast* (video). VHS. Privately published.
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- White, M. 2011. *Natural History of Delmarva Dragonflies and Damselflies: Essays of a Lifelong Observer*. University of Delaware Press, Newark, DE.

• WEBSITES •

**Allen Bryan's personal website: Damselflies and Dragonflies (found in Virginia, North Carolina, and Montana). Photos and some text for most species found in North Carolina.**

**<<http://www.visitingnature.com/damselfliesanddragonflies.htm>>**

**Giff Beaton's personal website. Dragonflies and Damselflies (Odonata) of Georgia and the Southeast. Photos and some text for most species found in North Carolina.**

**<<http://www.giffbeaton.com/dragonflies.htm>>**

**International Odonata Research Institute. Provides a number of links and checklists.**

**<<http://www.iodonata.net/>>**

**Odonata Central. Provides a number of links to various odonate resources, including online data entry.**

**<<http://www.odonatacentral.org/>>**

**Slater Museum of Natural History: North American Odonata. Checklist of North American Odonates.**

**<<http://www.pugetsound.edu/academics/academic-resources/slater-museum/biodiversity-resources/dragonflies/north-american-odonata/>>**

• ORGANIZATIONS •

**Dragonfly Society of the Americas**

**<<http://www.odonatacentral.org/index.php/PageAction.get/name/HomePage>>**

• ACKNOWLEDGMENTS •

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Shadow Darner -- <i>Aeshna umbrosa</i>	3	S5 G5
Green-striped Darner -- <i>Aeshna verticalis</i>	4	SR - S1 G5
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Maine Snaketail -- <i>Ophiogomphus mainensis</i>	50	SR - S2S3	G4
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\* Status:

NC: (There is no State protection for odonates in NC and thus no official status. SR and W are NC NHP designations only.)  
SR = Significantly Rare; status given by the NC Natural Heritage Program, which tracks the species in its database.  
W = Watch List; not tracked by the NC Natural Heritage Program, but species is scarce and NHP wishes to obtain records;  
may track at a later date.

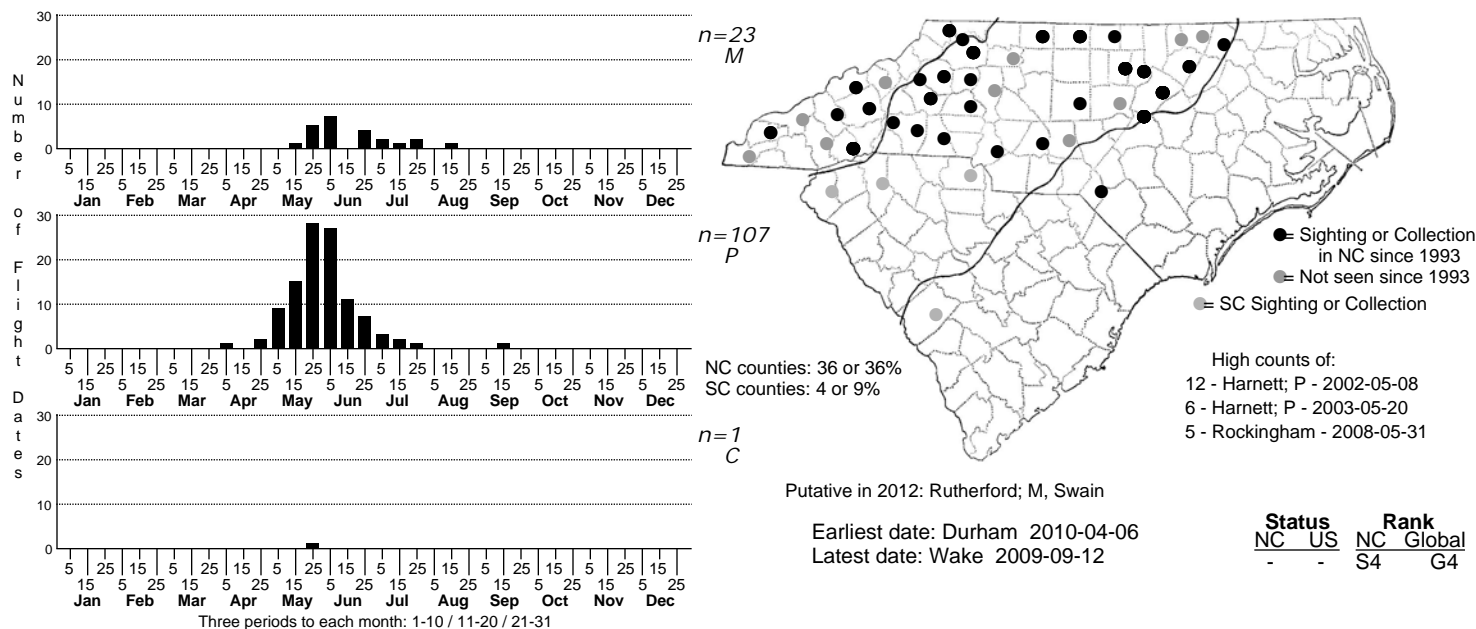
US: FSC = Federal Species of Concern

State:

Global: Global ranks are similar to state ranks except "in North Carolina" is replaced by "globally", and "extirpation from North Carolina" is replaced by "extinction".



## *Tachopteryx thoreyi* Gray Petaltail



**DISTRIBUTION:** Present throughout the mountains and Piedmont; very rare in the Sandhills (one sight record), but seemingly absent from nearly all of the remainder of the Coastal Plain.

**ABUNDANCE:** Generally uncommon, but may be fairly common, at least locally.

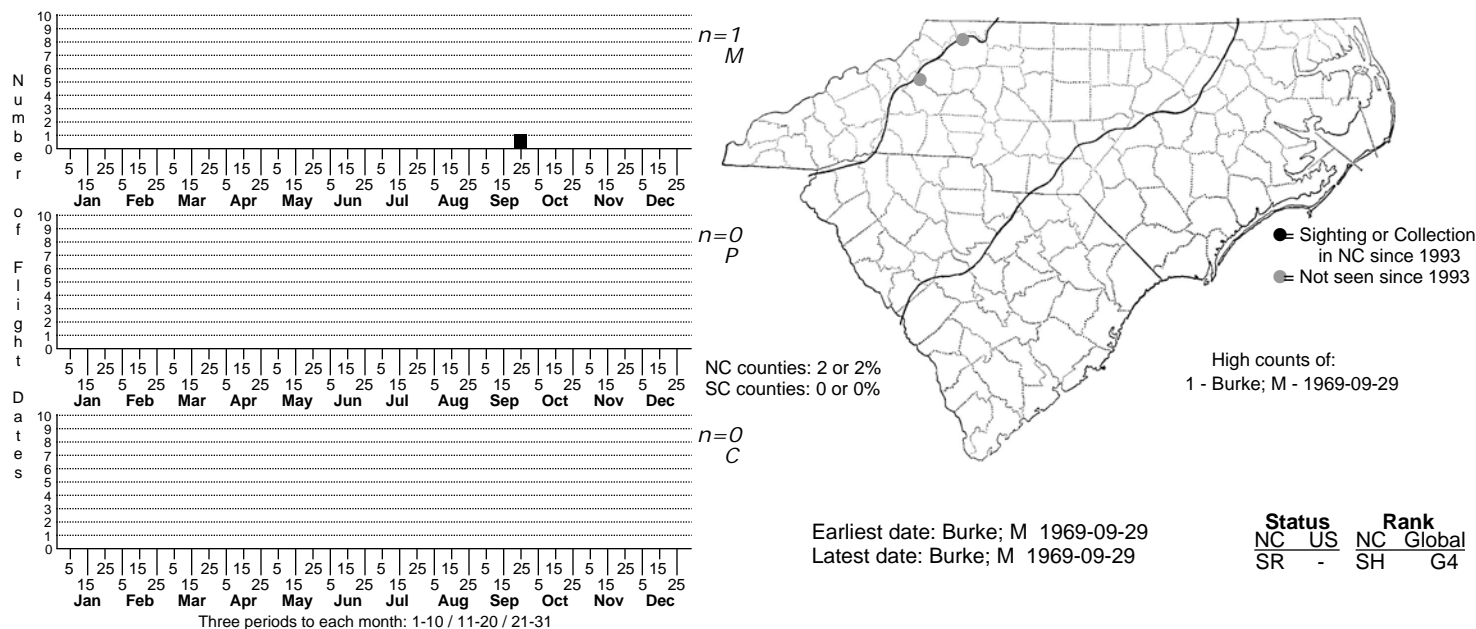
**FLIGHT:** In the Piedmont, late April to early July, and sparingly to late July; a later flight in the mountains by a month, from mid-May to mid-August. A recent report for 12 September in the Piedmont is extremely late and probably requires confirmation.

**HABITAT:** Breeds in wooded seepages, one of the few dragonflies to breed in seeps. Adults seen in upland forests and edges.

**BEHAVIOR:** Tame. Typically perches vertically on tree trunks, but also perches on humans!

**COMMENTS:** This is a "primitive" species. It is easily identified, as it is the only gray-colored species on the abdomen and as it often gives the observer an excellent view while it perches on tree trunks and other conspicuous places. It was formerly (20-30 years ago) thought to be rare (or very poorly known) in the state, but with many more observers afield, the species has been seen frequently, probably not representing a population increase. Though numbers are not overly great for a large dragonfly, its habit of flying to wooded openings in uplands, such as along jeep roads and sunny trails, and perching on tree trunks and humans, makes it readily conspicuous and an "odonate favorite".

## *Aeshna tuberculifera* Black-tipped Darner



**DISTRIBUTION:** Northern mountains/foothills only; records only from Wilkes and Burke counties.

**ABUNDANCE:** Presumably very rare or rare. Poorly known in the state, and now considered of historical occurrence (last known record from 1969).

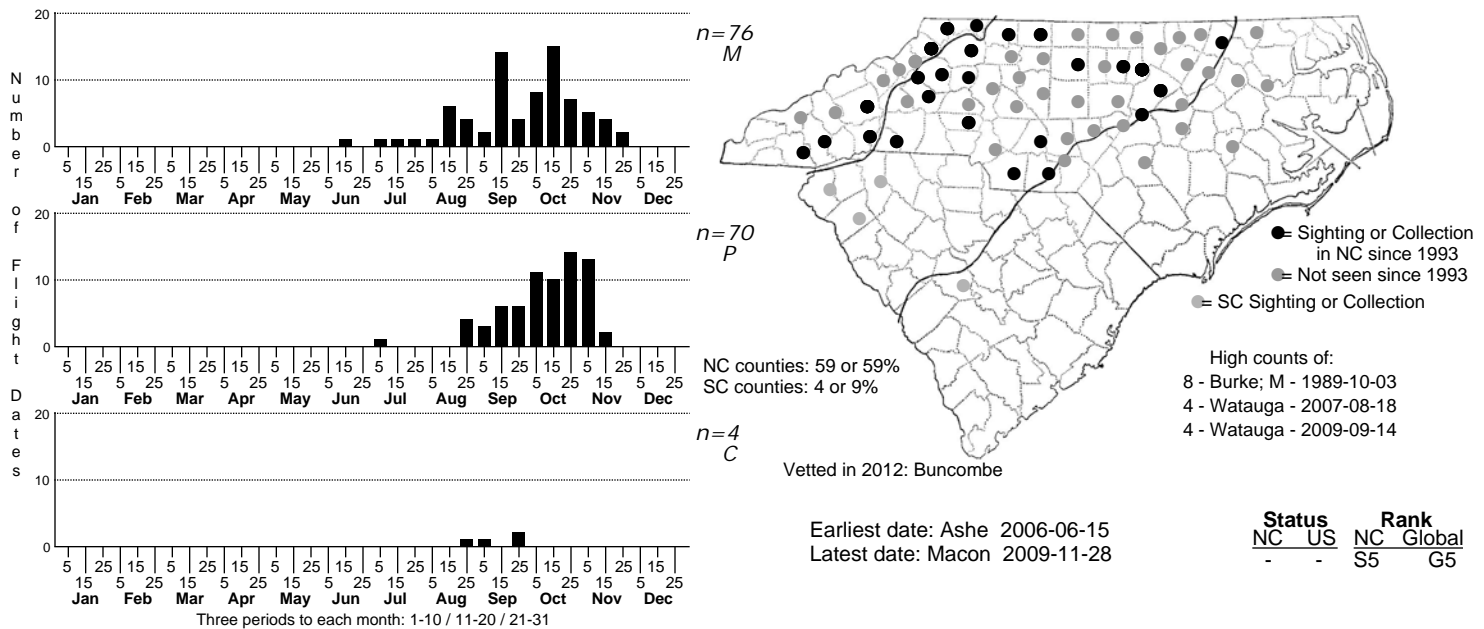
**FLIGHT:** Late summer; July into early October likely, with the only date record available being 29 September.

**HABITAT:** Mostly at ponds with marshy edges, such as cattails. Acidic waters.

**BEHAVIOR:** Not known in NC. Apparently can be seen in flight over land as well as over ponds/pools.

**COMMENTS:** As there seem to be few odonate specialists working the mountain region, our knowledge of this species is very poor. NC lies at the southern edge of the range, as it is not known from Georgia. Because the last known record for the state was 1969 -- we don't have a date for the Wilkes County record -- the NC Natural Heritage Program has moved the NC Rank from S1? to SH (historical). This should not mean that the species has become extirpated from the state, but that we cannot be sure that it is still present.

## *Aeshna umbrosa* Shadow Darner



**DISTRIBUTION:** Mountains, Piedmont, and western third of the Coastal Plain; probably in the Sandhills reion.

**ABUNDANCE:** Uncommon to at least locally fairly common in the mountains, uncommon over most of the Piedmont, and rare in the western Coastal Plain. However, abundance is somewhat difficult to assess, as the species often flies in late afternoon and near dusk, in shaded parts of forests. Also, it flies late in the season, when much odonate field work has subsided. Found in most counties within the range in the state. It is certainly not nearly as numerous or conspicuous as most darners of the spring and early summer seasons.

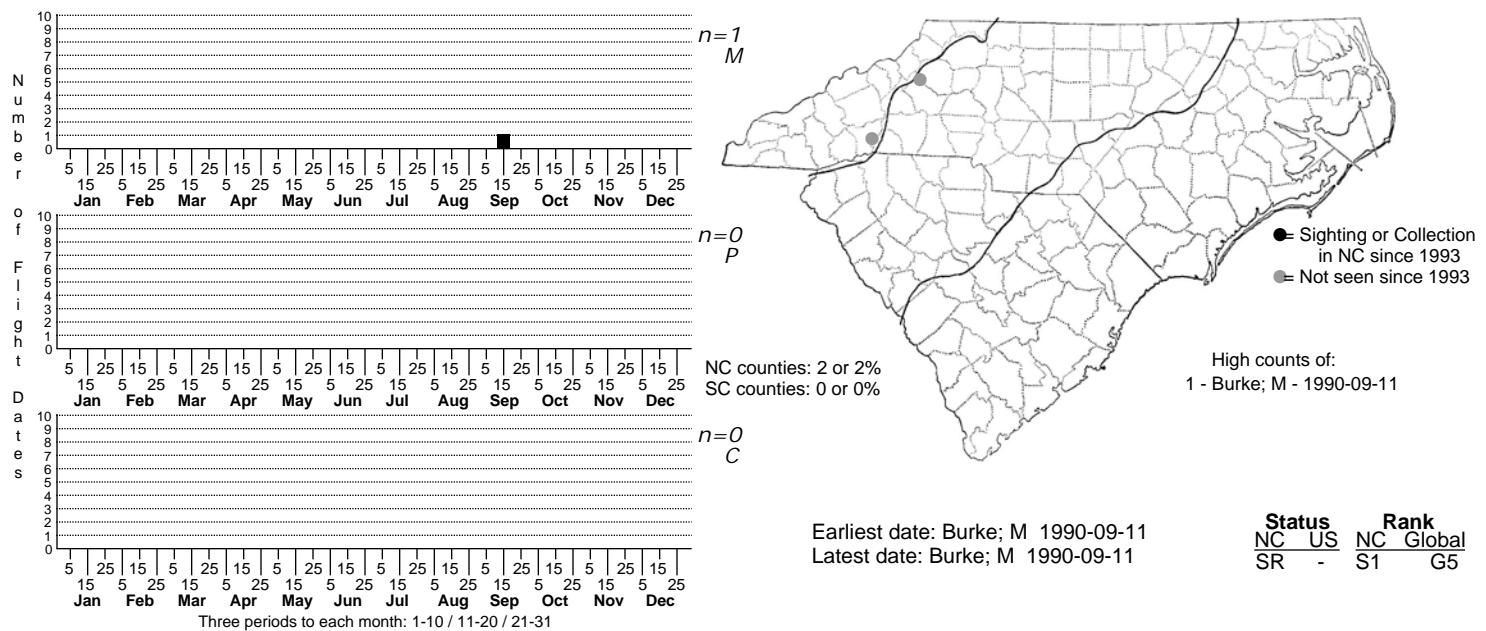
**FLIGHT:** Because this is a late summer/fall species, the mountain flight occurs somewhat earlier than the flights downstate. In the mountains it occurs mainly from early July to mid-November, peaking in September, with a few records even to late November. In the Piedmont the flight is later, mainly from late August to early November, and possibly into late November. The few flight dates from the Coastal Plain are from late August to late September, though it certainly must fly into November.

**HABITAT:** The vicinity of ponds, lake shores, marshes, and small streams, generally near wooded areas, but it can occur in open areas. Seldom seen near fields or areas far from water.

**BEHAVIOR:** Rather secretive, often staying in shady places.

**COMMENTS:** Of the "common" dragonflies in the state (collected/reported in over 55% of the counties), this is not a well known species to most observers, as it is rather scarce or hard to find in the Piedmont. Unlike other darners, it seldom flies around open areas, fields, or ponds during the morning or afternoon hours; it keeps more to shaded areas and later times of the day for flying.

## *Aeshna verticalis* Green-striped Darner



**DISTRIBUTION:** Mountains only; despite this being a northern species, with NC at the southern edge of the range, the records are from the central and southern escarpment region: Burke and Henderson counties.

**ABUNDANCE:** Presumably very rare or rare. As with the Black-tipped Darner, few persons are working the mountain region to determine range and abundance of odonates.

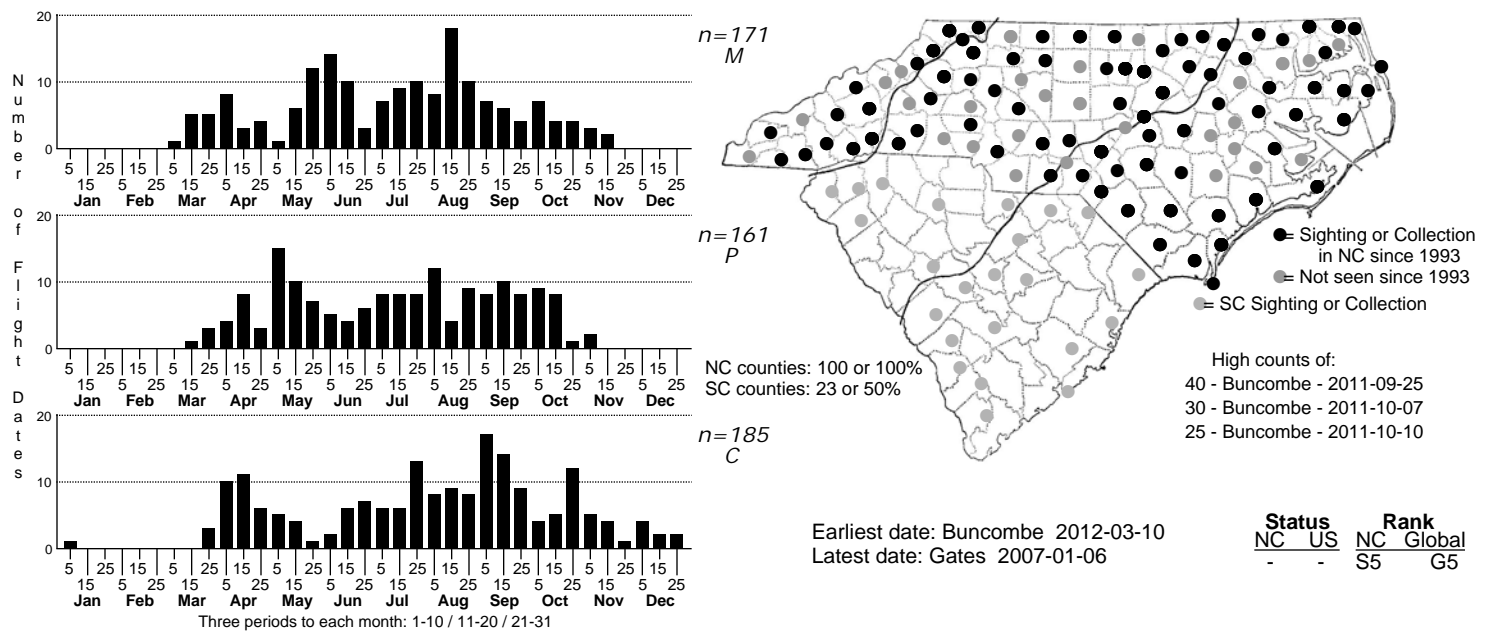
**FLIGHT:** Late summer -- July into September likely in NC, though the only date available is 11 September.

**HABITAT:** Small ponds, pools, and seeps, typically where spring-fed, and usually near a forest.

**BEHAVIOR:** Males spend much time feeding along pond and marshy margins. How much time is spent foraging over land is not known.

**COMMENTS:** Many odonates with ranges restricted to the mountains in NC are seldom reported in recent years, as little field work is done currently in this region. There are only two county records for this species, as well as for the Black-tipped Darner; however, as the last recorded year available to us is from 1990, we consider the Green-striped Darner to still be present in the state.

## *Anax junius* Common Green Darner



**DISTRIBUTION:** Statewide. Occurs in all 100 counties.

**ABUNDANCE:** Common statewide, somewhat more numerous in the Coastal Plain than farther westward.

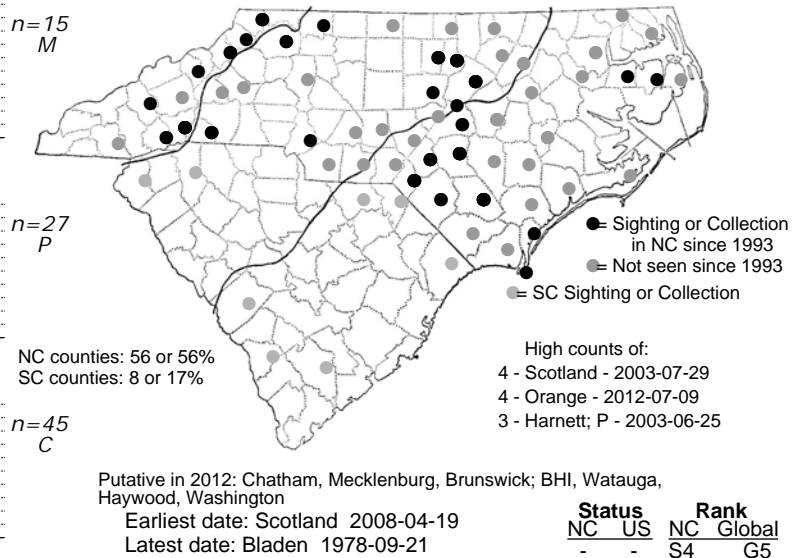
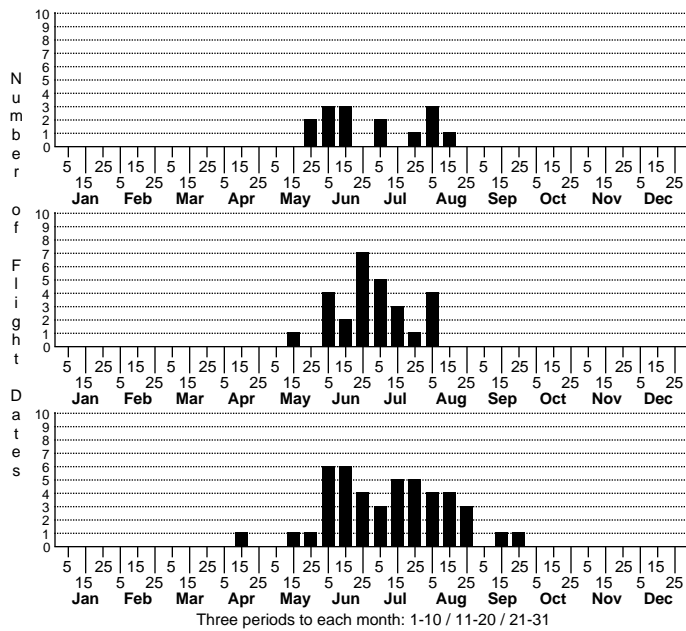
**FLIGHT:** Generally from mid-March to mid-November, and straggling at least in the Coastal Plain to the end of the year. It has the longest flight period of any odonate in the state, as it is the species most likely to be seen in early winter -- being absent only for about two months in mid- and late winter.

**HABITAT:** Wide-ranging; found around lakes, ponds, marshes, and other mostly still waters. Forages over fields, ponds, lakes, and other open habitats, as well as along roads through woods.

**BEHAVIOR:** Typically seen flying at eye-level or higher, over a wide range of open habitats.

**COMMENTS:** The species is seldom seen in truly large numbers or swarms. It can often be the first species of dragonfly one sees in spring, or the last in late fall. The species is usually easily identified in flight, even at a distance of 100 feet or more, through binoculars.

## *Anax longipes* Comet Darner



**DISTRIBUTION:** Statewide, though more widespread in the southern half of the Coastal Plain and southeastern part of the Piedmont. Of spotty occurrence in most of the Piedmont and mountains, and the northern half of the Coastal Plain, though perhaps occurs in all counties.

**ABUNDANCE:** Locally fairly common in parts of the Coastal Plain, perhaps most numerous in the Sandhills. Uncommon in the eastern Piedmont, and generally rare to uncommon farther westward. Even though it is not a scarce species, our highest one-day count is just 4 individuals.

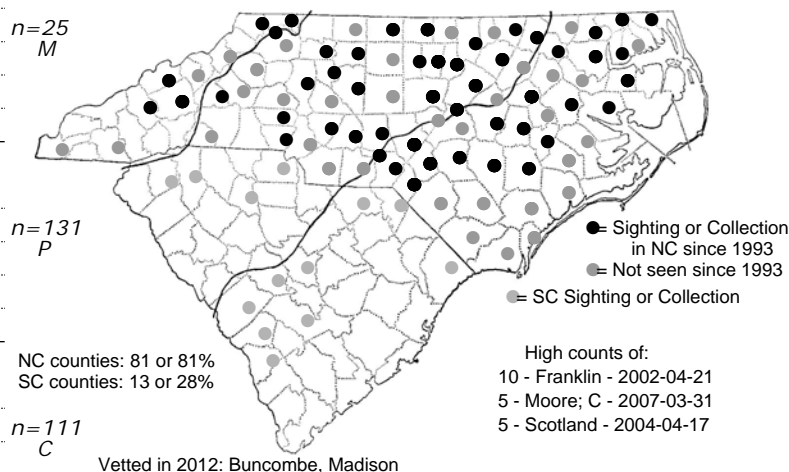
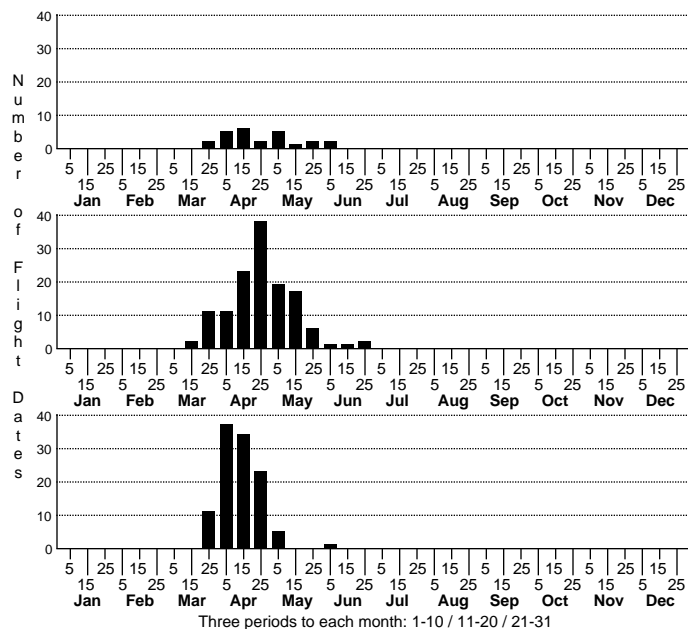
**FLIGHT:** In the Coastal Plain, generally from late April or early May to late September. Flies at least from mid-May to mid-August in the Piedmont and in the mountains.

**HABITAT:** Mainly small to medium ponds, including natural ones such as limesink ponds and Carolina bays.

**BEHAVIOR:** Most often seen patrolling back and forth over a pond. At times seen over dry land, but best looked for over a pond/small lake.

**COMMENTS:** Males, with their bright red abdomen contrasting with the green head and thorax, are among our most beautiful and easily identified dragonflies. Its large size also adds to its striking appearance. Females and immatures can easily be confused with Common Green Darner, and probably cannot be safely identified while in flight.

## *Basiaeschna janata* Springtime Darner



Earliest date: Orange 2000-03-17  
Latest date: Orange 2006-06-26

Status	Rank
NC US	NC Global
- -	S5 G5

**DISTRIBUTION:** Nearly statewide. Might be absent in a few of the extreme eastern counties (not recorded from Currituck southward to Carteret counties). Of spotty occurrence in the mountains, though likely occurs in all counties there.

**ABUNDANCE:** Fairly common in most of the Piedmont and upper half of the Coastal Plain. Uncommon in the eastern Coastal Plain and mountains.

**FLIGHT:** Primarily mid-March to late May in the Piedmont and Coastal Plain; several "fluke" records in mid- to late June in the Piedmont. Mainly late March to early June in the mountains. Peak numbers are in mid-April.

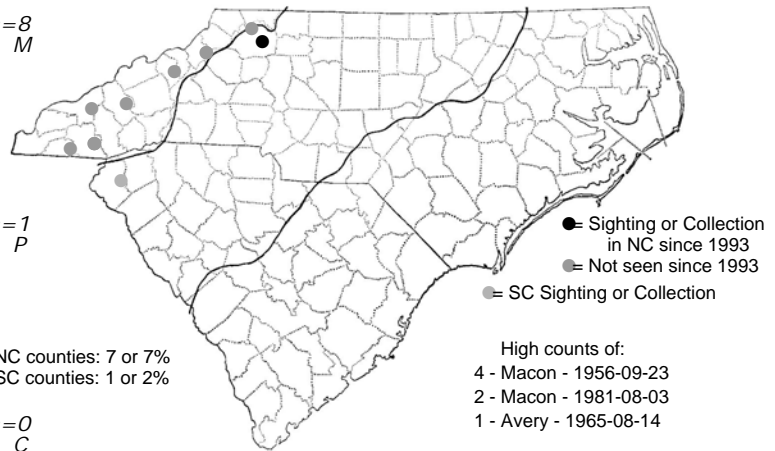
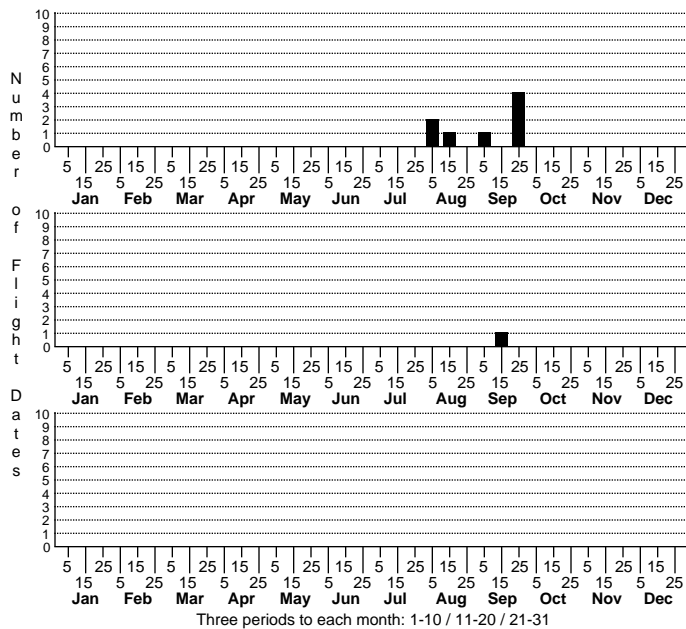
**HABITAT:** Breeds at streams, less often at ponds or lakes. More often seen along woodland borders or wide roads.

**BEHAVIOR:** Flies low along dirt roads and clearings in upland or mesic woods, perching frequently in an oblique manner on twigs. Relatively easy to identify, as it is not particularly wary when perched.

**COMMENTS:** The turquoise blue spots on the abdomen are quite stunning, especially in males. The species can often be identified in flight through binoculars, if the blue spots can be seen.



# *Boyeria grafiana* Ocellated Darner



Earliest date: Macon 1981-08-03  
Latest date: Avery 1969-09-30

Status		Rank	
NC	US	NC	Global
SR	-	S2?	G5

**DISTRIBUTION:** Mountains only; recorded from 7 counties. A northern species that ranges south only to the mountains of northern Georgia.

**ABUNDANCE:** Very poorly known, though certainly uncommon at best. As nearly all of the 9 records with data are older than 20 years ago, it might now be considered rare.

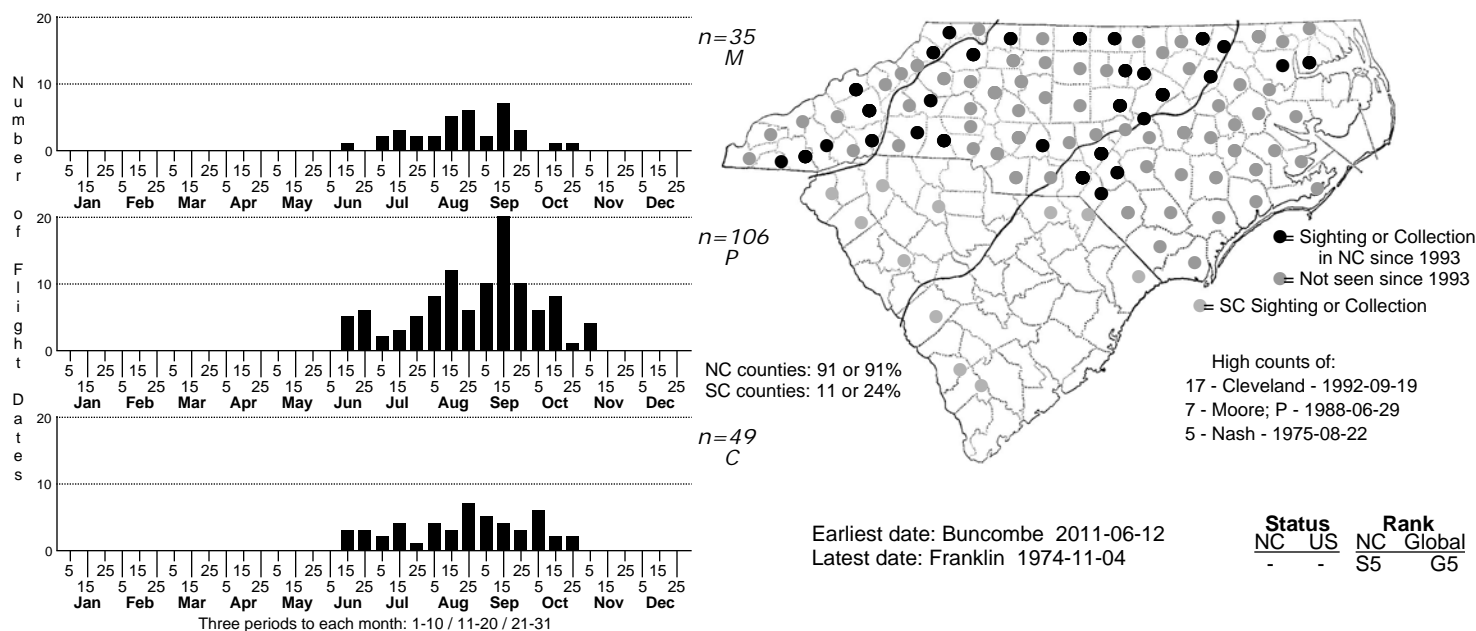
**FLIGHT:** The flight occurs in late summer and early fall -- from early August to the end of September. In Georgia, it also flies in August and September (Beaton 2007).

**HABITAT:** Fast, rocky streams in wooded habitats.

**BEHAVIOR:** As with Fawn Darner, it forages by flying along creek banks, apparently fairly slowly. However, that species occurs mainly along slow moving waters, whereas the Ocellated occurs along rapidly moving waters.

**COMMENTS:** As there seems to be little odonate field work currently in the mountains, especially targeting scarce species, its range and status are not well known. Thus, the NC Natural Heritage Program wishes to keep records on it, and in November 2012 has up-listed it from Watch List to the Rare List, as Significantly Rare.

## *Boyeria vinosa* Fawn Darner



**DISTRIBUTION:** Nearly statewide, but apparently absent from the immediate eastern Coastal Plain north and south of Albemarle Sound. No records east of Gates, Chowan, Beaufort, and Carteret counties.

**ABUNDANCE:** Fairly common (but easily overlooked) in the mountains, Piedmont, and upper Coastal Plain; less numerous in much of the Coastal Plain, but not rare except near the coast.

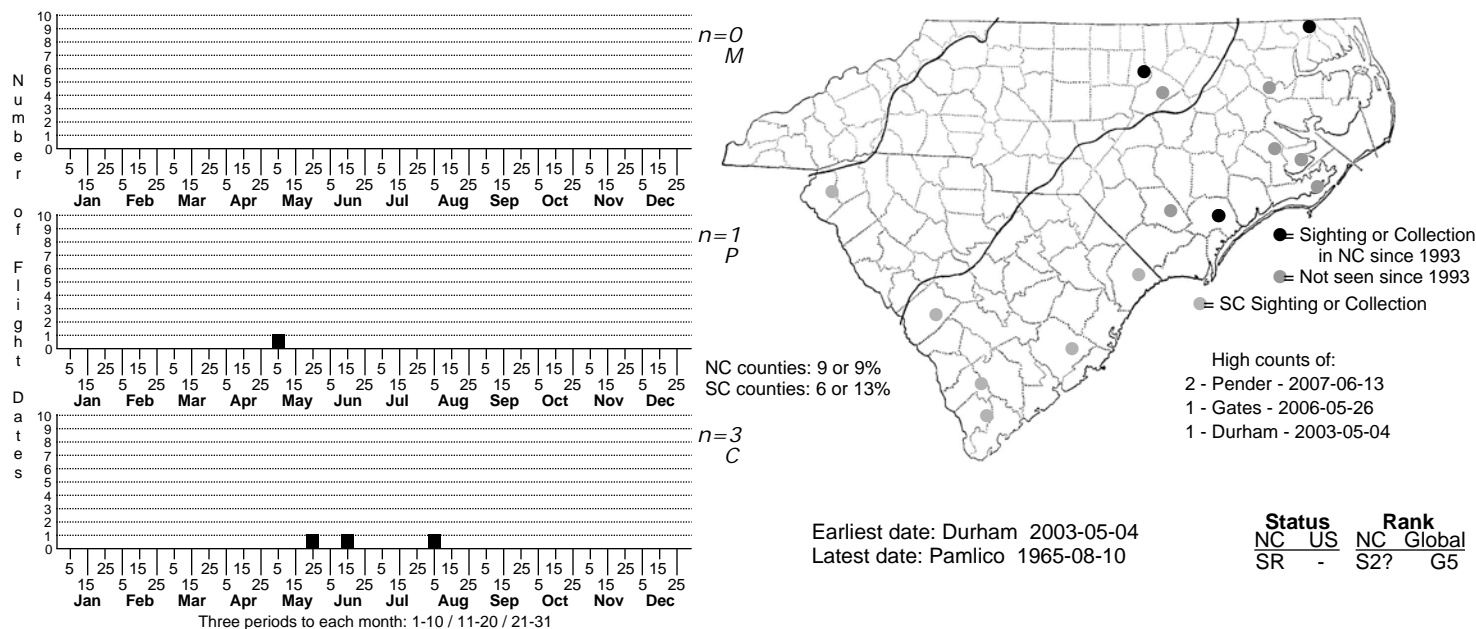
**FLIGHT:** Flight begins in mid-June in all provinces, and extends into very early November in the Piedmont and Coastal Plain, and to late October in the mountains.

**HABITAT:** Flies low over creeks, typically following the creek banks, poking into nooks and crannies. Favors somewhat slow-moving creeks in hardwood forests.

**BEHAVIOR:** This species and the Ocellated Darner like dark places. It rests for most of the day inside a forest, hanging on twigs; sometimes disturbed when an observer is walking through a forest near a creek. It normally flies late in the afternoon and at dusk.

**COMMENTS:** This species must often be intentionally searched for, looking around creeks late in the day. A dragonfly flying slowly back and forth along creek banks, in shady situations, is often a Fawn Darner.

## *Coryphaeschna ingens*    Regal Darner



**DISTRIBUTION:** Sparingly over the Coastal Plain and extreme lower edge of the Piedmont. Not surprisingly, the northern limit of the species' range is extreme southeastern VA, and it is found mainly in the Southern Atlantic and Gulf coastal plains.

**ABUNDANCE:** Scarce; seemingly rare, but abundance difficult to assess because of its often high-flying behavior, making the species difficult to confirm. Most numerous in Florida.

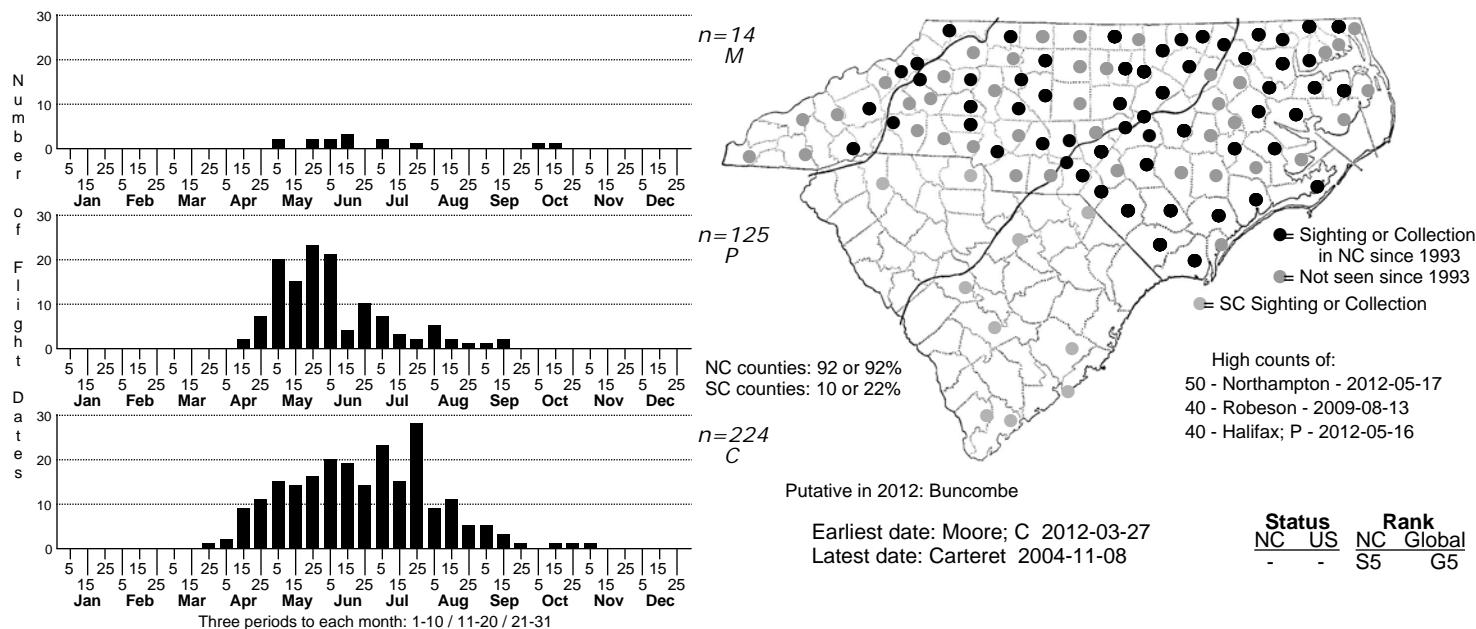
**FLIGHT:** In Georgia, it flies from early April to mid-September. The few (four) flight date records from NC are 4 May, 26 May, 13 June, and 10 August, suggesting a moderately extended flight.

**HABITAT:** Ponds and lakes in forested areas, but may occur over fields and other open areas.

**BEHAVIOR:** Typically seen flying rather high, often at treetop level, over a pond nearby.

**COMMENTS:** The species is very poorly known in North Carolina, recorded only from nine counties (if the Durham report is correct). Because hardly any new reports have been made, the NC Natural Heritage Program moved the species from the Watch List to the Rare List, as Significantly Rare, in fall 2012. Though this is a very large/long species, it could easily be confused in flight (and even perched if not seen closely) with the much more common Swamp Darner.

## *Epiaeschna heros* Swamp Darner



**DISTRIBUTION:** Statewide, though distribution in the mountains is spotty (but likely occurs in all 100 counties of NC).

**ABUNDANCE:** Common to often very common in the Coastal Plain, and fairly common to common in the Piedmont; rare to uncommon in the mountains.

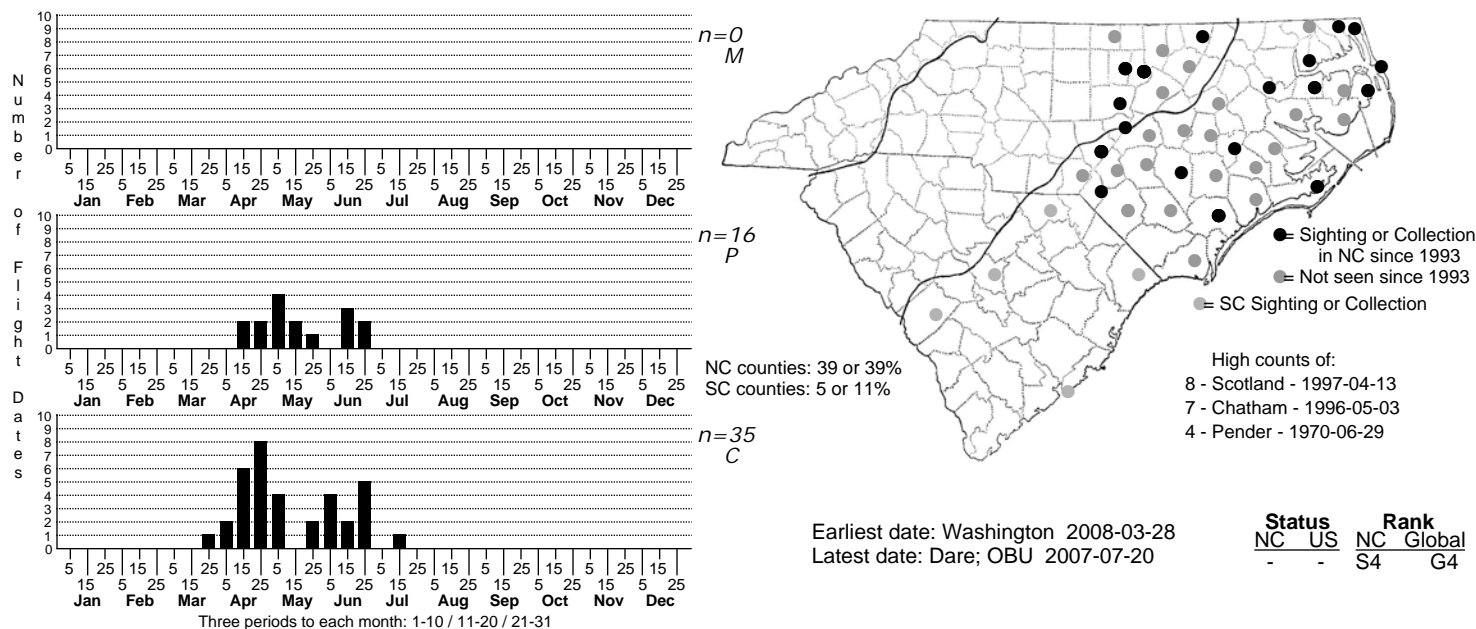
**FLIGHT:** The flight is from the end of March or early April into early November in the Coastal Plain. In the Piedmont the flight begins a bit later, in the latter half of April, and likely ends around mid-October, but oddly we have no records after September! The mountain flight occurs from early May to mid-October.

**HABITAT:** Swamps, bottomlands, rivers, and large streams; not numerous around forested lakes or ponds.

**BEHAVIOR:** Often seen cruising along forested roads and other clearings near woodlands and swamps, such as along roads through bottomlands and swamps. Flight is often head-height to treetop level. Frequently perches, usually at head-height or above, hanging downward from a twig.

**COMMENTS:** If a large dragonfly is seen flying over a road through a forested wetland, it is most likely this species. Several can often be seen in the same general area, though it normally doesn't form swarms. It can often be the most commonly seen species on a summer or early fall day, especially in the Coastal Plain.

## *Gomphaeschna antilope* Taper-tailed Darner



**DISTRIBUTION:** Eastern half of the state only; throughout the Coastal Plain, and in the Piedmont west to Caswell, Orange, Chatham, Moore, and Richmond counties.

**ABUNDANCE:** Uncommon, and perhaps somewhat local, in most of the Coastal Plain. Rare in the eastern Piedmont, as well as in the northwestern Coastal Plain.

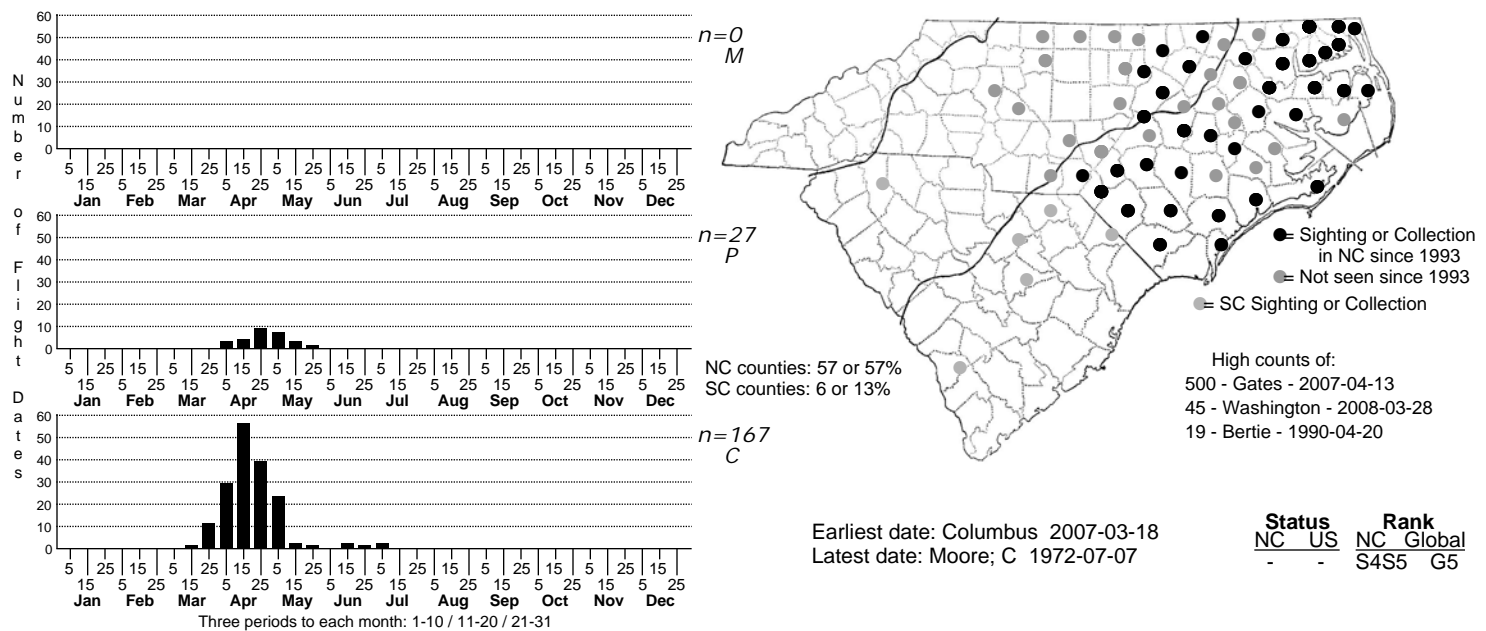
**FLIGHT:** Spring into early summer only. In the Coastal Plain, the flight is mainly from early April (very rarely in late March) to late June, sparingly into July. In the Piedmont, the flight occurs from mid-April to late June. The peak is from mid-April to early May.

**HABITAT:** Typically in and near swamps, but also along nearby rivers and streams.

**BEHAVIOR:** Forages typically singly along wooded roads and openings near swamps and rivers, not over the water.

**COMMENTS:** The species looks similar to Harlequin Darner, though has less green spots on the abdomen. Whereas the latter has a somewhat similar range and flight period to Taper-tailed, it is much more often encountered. Recent observations have been scarce, perhaps because of this similarity.

## *Gomphaeschna furcillata* Harlequin Darner



**DISTRIBUTION:** Throughout the Coastal Plain, and the eastern two-thirds of the Piedmont. Ranges as far west as Stokes, Forsyth, and Iredell counties, though occurrence in most of the Piedmont is spotty.

**ABUNDANCE:** Locally common to very common (in swarms), but not particularly widespread, in the Coastal Plain. Uncommon in the extreme lower Piedmont, but rare in the central Piedmont.

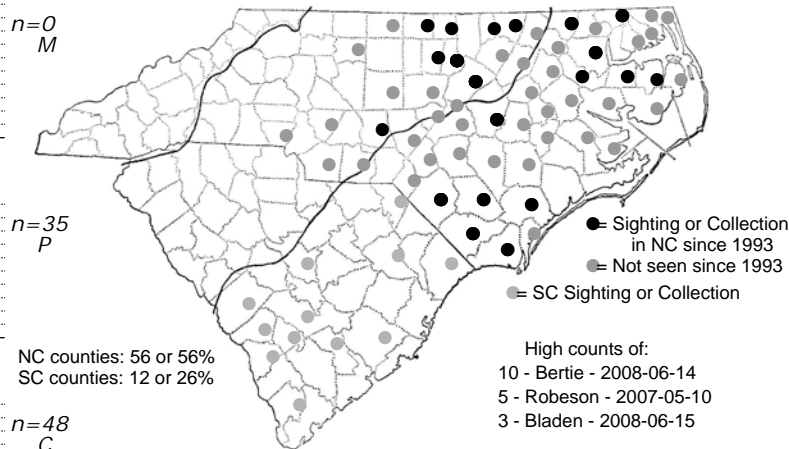
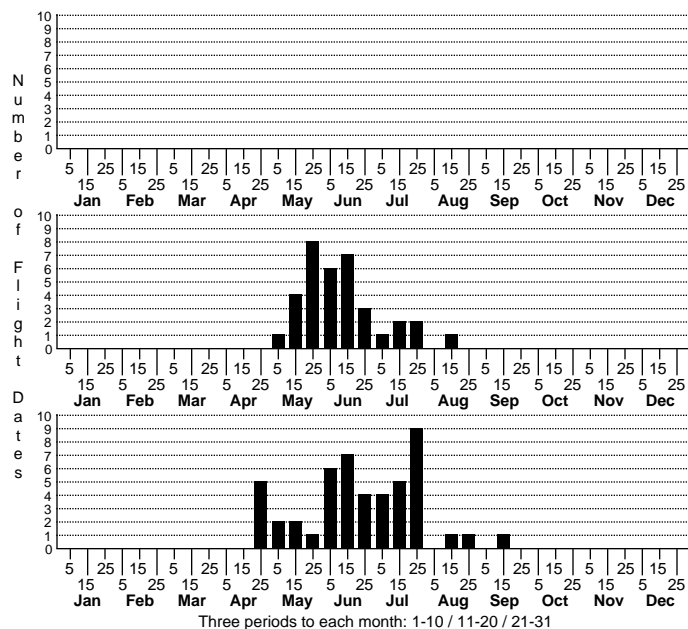
**FLIGHT:** Spring season, but sparingly into early summer. Its flight in the Coastal Plain is from mid-March to late May, with scattered records to early July; the Piedmont flight period is narrower -- early April to late May. The peak of the flight is in mid-April.

**HABITAT:** Typically near swamps or wetter bottomlands, but also near wooded creeks.

**BEHAVIOR:** This species has a fairly unusual behavior. Males patrol over swamps or marshes, but also along roads through wetlands and also in nearby uplands. They fly generally from 3-6 feet off the ground, often back and forth, and sometimes hover in the observer's face! They do not perch often, but when they do, it typically is vertically on tree trunks, but at times on humans.

**COMMENTS:** Dunkle (2000) calls the species "scarce" over its entire range; Beaton (2007) calls it "Rare to uncommon and local" throughout Georgia. Yet, observers have often seen dozens in some favorable spots in the NC Coastal Plain, and it can be the most commonly seen dragonfly at a few wetland areas, especially acidic wetlands such as pocosins. And, Cuyler has collection records from all but a few of the Coastal Plain counties in the state.

# *Nasiaeschna pentacantha* Cyrano Darner



Earliest date: Greene 1976-04-23  
Latest date: Tyrrell 1997-09-14

Status	Rank
NC US	NC Global
- -	S4S5 G5

**DISTRIBUTION:** The eastern two-thirds of the state only. Throughout the Coastal Plain, and the eastern 50-60% of the Piedmont, west to Rockingham, Forsyth, and Gaston counties.

**ABUNDANCE:** Fairly common (but never in swarms) in the Coastal Plain, generally uncommon in the eastern Piedmont, but rare in the central Piedmont.

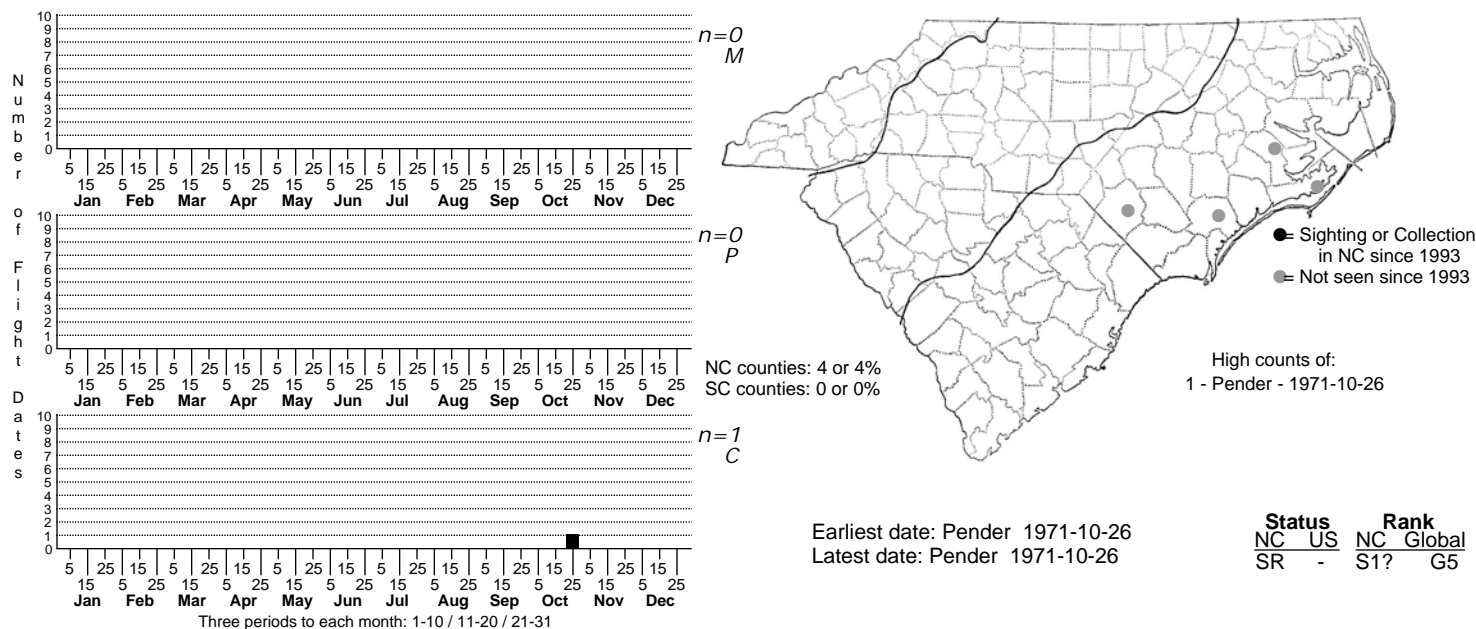
**FLIGHT:** Mainly in late spring and summer. In the Coastal Plain, the flight occurs from late April to late August, and sparingly to mid-September. The Piedmont flight occurs from early May to mid-August. The peak tends to occur in June and July.

**HABITAT:** Mostly standing water in forested areas, such as swampy pools or openings in swamps; forested ponds; canals. They favor blackwater, as opposed to brownwater, bodies of water.

**BEHAVIOR:** Males have a distinctive flight behavior. They fly monotonous routes back and forth, often about 3-4 feet off the water, over canals and pools/ponds. Adults are only infrequently seen away from such pools and ponds; normally, one must look for the species over water.

**COMMENTS:** It can be frustrating to see one perched. However, the species can be identified in flight, through binoculars, and the "nose" can be seen under such circumstances. As the species is quite territorial, normally an observer will only see a single Cyrano Darner at a given body of water, and thus it is difficult to see more than a few of them in a given day.

# *Triacanthagyna trifida* Phantom Darner



**DISTRIBUTION:** The southeastern corner of the state only; ranging north to Craven County and inland to Robeson County. NC lies at the northeastern edge of the species' range.

**ABUNDANCE:** Apparently rare; known from just four counties. However, as it is crepuscular, special effort must be made to see it. Thus, its true abundance would be difficult to determine.

**FLIGHT:** Perhaps the latest flying odonate in NC -- in terms of flight period, with the flight likely only in October and November; the only NC date available is 26 October. The flight in GA is early October to mid-December.

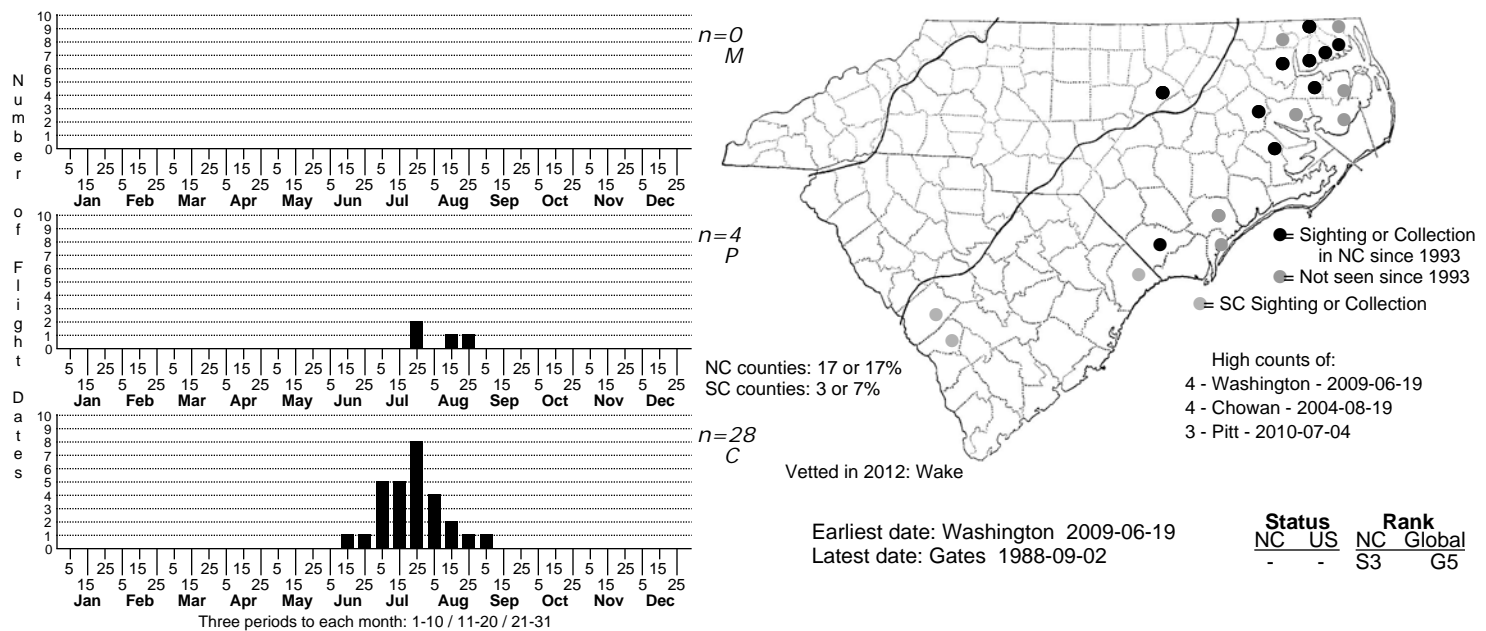
**HABITAT:** Small wooded pools, typically near rivers, in heavily forested areas.

**BEHAVIOR:** The species flies only in fairly dark conditions, typically the last two hours of daylight, or on very dark, cloudy days.

**COMMENTS:** The species has a very thin abdomen and should be readily distinguished by shape if seen well, a rare circumstance in NC. Its very late flight season, plus crepuscular habits, means that a biologist is unlikely to see the species during casual field work, without a special effort directed just for it. Because there are no recent records, and it has been recorded from just four counties, the NC Natural Heritage Program has deemed it worthy of tracking (as of fall 2010) as a Significantly Rare species. The NC Rank was moved from S2? to S1? in November 2012, to highlight the lack of recent records.



## *Aphylla williamsoni* Two-striped Forceptail



**DISTRIBUTION:** Lower half of the Coastal Plain, and also recently (2011) found and photographed in Wake County, in the eastern Piedmont. Records surprisingly few for the southern half of the Coastal Plain, as this is mostly a southern species. Beaton (2007) states that in GA it is "rare above [the Fall Line] but expanding into the middle Piedmont".

**ABUNDANCE:** Uncommon in the "Tidewater" portion of the Coastal Plain -- i.e., counties bordering Albemarle and Pamlico sounds, but seemingly rare southward in this province. Very rare to absent in the upper Coastal Plain; however, in the past several years, strays (?) have appeared inland to Wake County, which lies in the Piedmont. Thus, records might begin to spread inward of the central Coastal Plain in upcoming years.

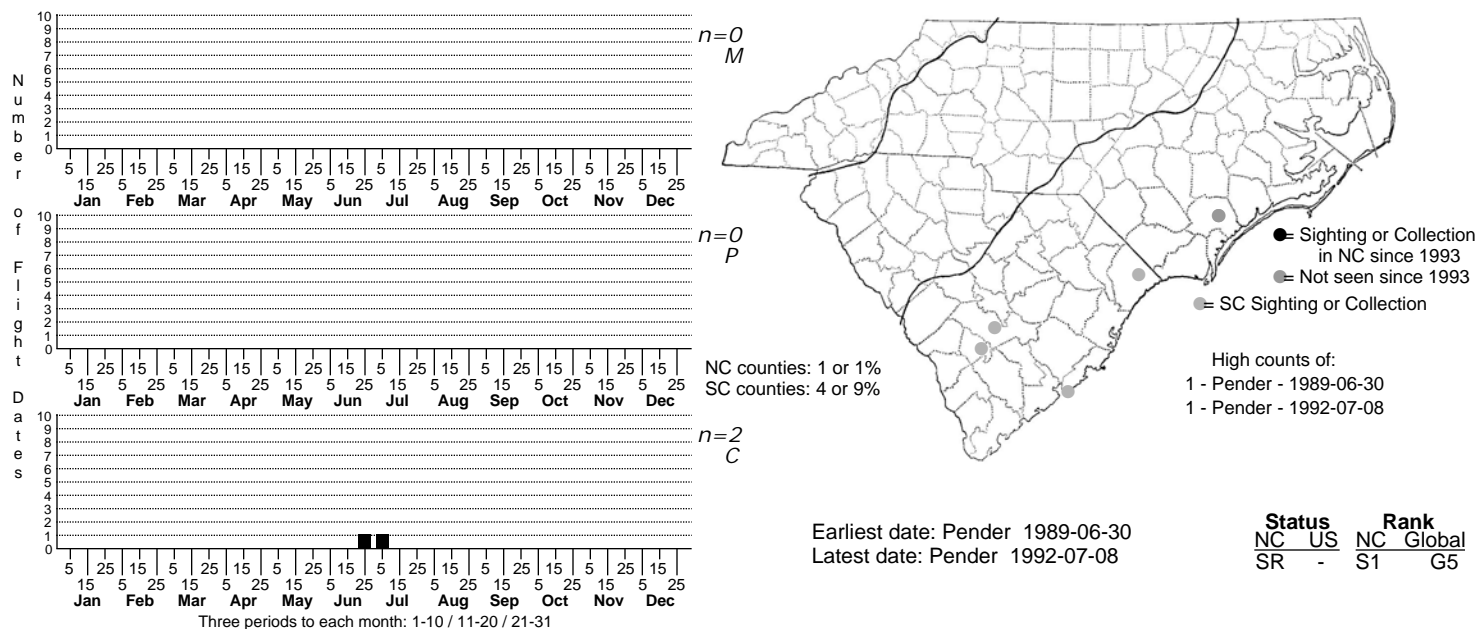
**FLIGHT:** In the Coastal Plain, present from mid-June to early September. The few records from the Piedmont, all from Wake County, fall from late July to late August.

**HABITAT:** Vicinity of ponds and lakes, as well as canals, especially muck- or peat-bottom ones. These waters can be somewhat disturbed and not "high-quality".

**BEHAVIOR:** May perch on the ground near a pond, or on vegetation around a pond.

**COMMENTS:** Because Cuyler never collected the species in NC farther inland than Hertford, Bertie, and Pitt counties, we assume that the 2011-12 records from Wake County represent a recent inland expansion of the range. Oddly, we have no records yet for the inner 40-50% of the Coastal Plain, though hopefully some records from these counties will come forth in the next few years.

# *Arigomphus pallidus* Gray-green Clubtail



**DISTRIBUTION:** Extreme southeastern corner of the state; recorded (by specimen) only from Pender County. As one would surmise, NC lies at the northeastern corner of the species' range.

**ABUNDANCE:** Though common in much of Florida, it is undoubtedly very rare in NC.

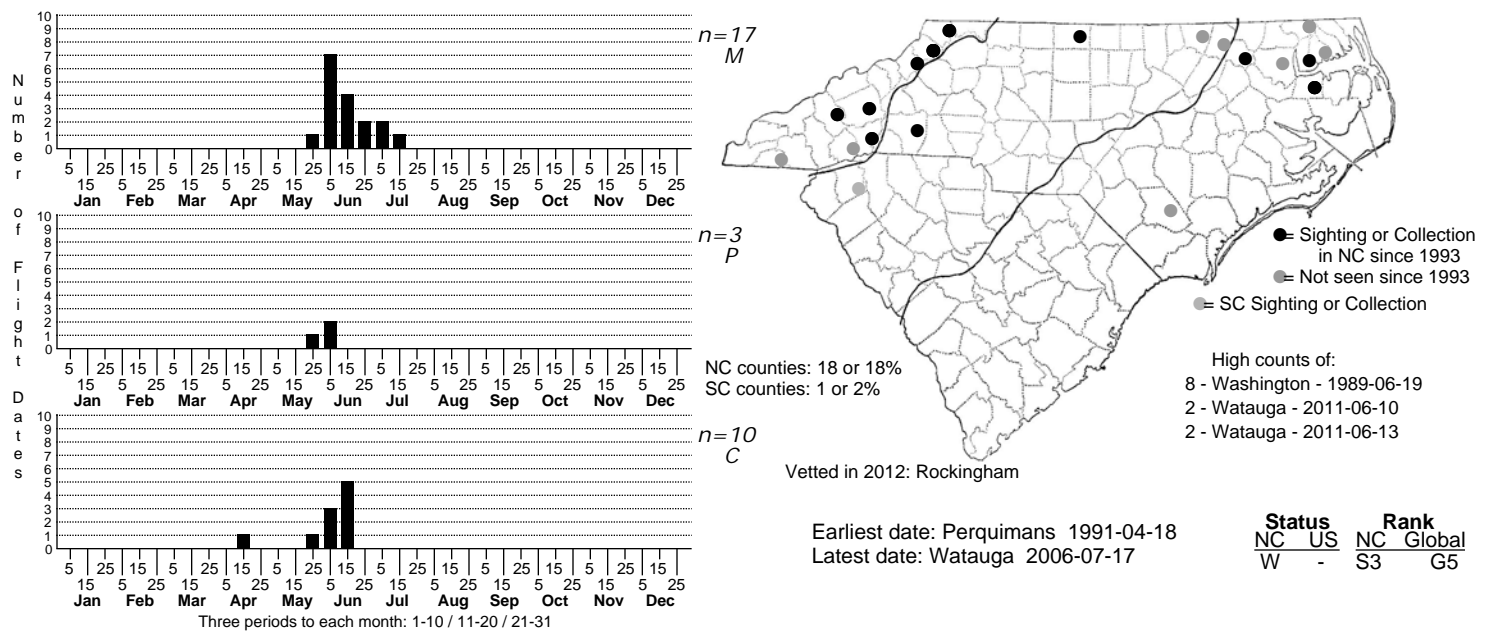
**FLIGHT:** April to July in Georgia. Randy Emmitt has photo records from coastal SC from May 2000 and 29 April 2001. Interestingly, the only two records for NC are for 30 June and 8 July. Obviously, the flight in NC is later than that farther south, and likely is May into early July.

**HABITAT:** Lakes, ponds, and edges of slow-moving rivers and creeks.

**BEHAVIOR:** The species perches readily on the ground or near ponds, and can be conspicuous where it occurs.

**COMMENTS:** For a clubtail, this is one of the easiest species to identify. The sides of the thorax are essentially unmarked and very dull, washed-out gray-green or pale green. Most other clubtails have conspicuous diagonal dark or light stripes on the thorax. Both of the known records for the state are from the same area in Pender County, three years apart.

# *Arigomphus villosipes* Unicorn Clubtail



**DISTRIBUTION:** The mountain region, the extreme northern Piedmont, and the adjacent northern Coastal Plain. A record from Bladen County seems odd, and it is not in Cuyler's specimen collection. A photo record from Rockingham County in 2012 fills the large gap between the mountains and Warren County, at least in Piedmont counties along the VA border. NC lies at the southeastern edge of the species' range.

**ABUNDANCE:** Uncommon (and possibly local) in the mountains; seemingly very rare eastward in the Piedmont near the VA border, to Warren County; rare to locally uncommon in the northern Coastal Plain, south to Washington County. Perhaps rare in the southwestern mountains. Dunkle (2000) calls the species "common", but at the southern edge of the range, in northern Georgia, it is "rare" (Beaton 2007).

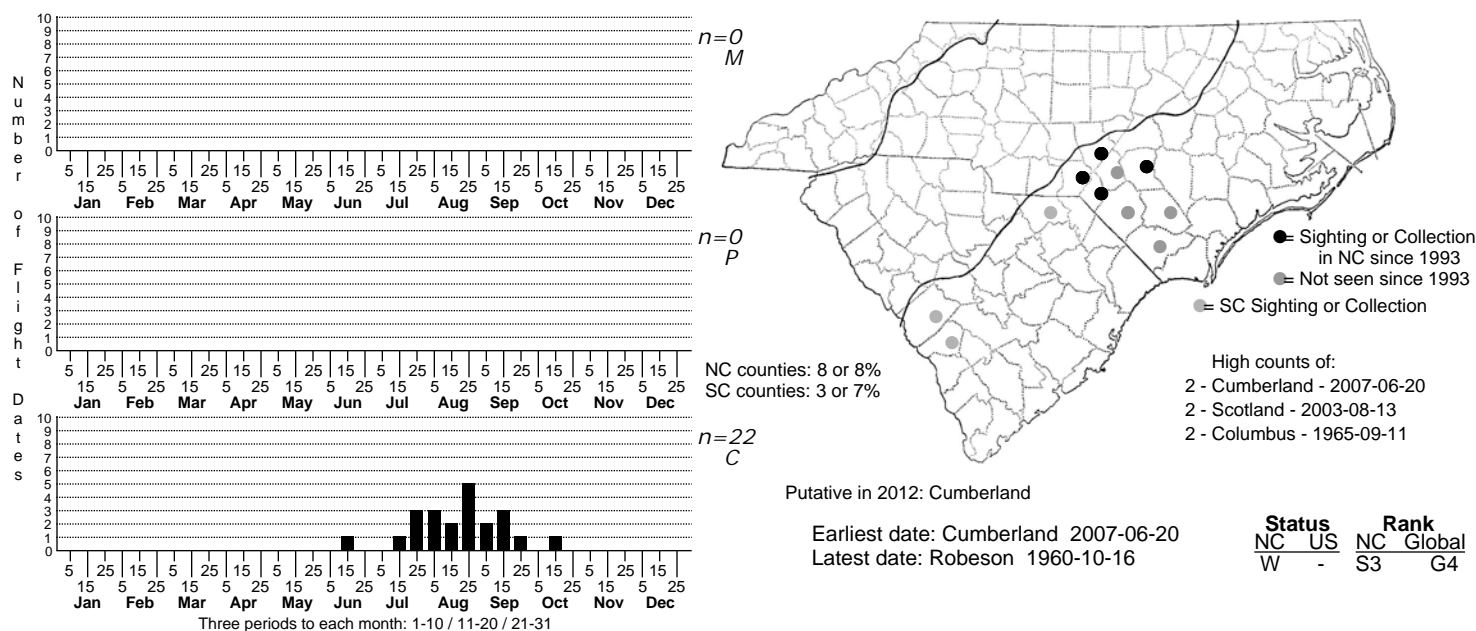
**FLIGHT:** The mountain flight occurs from late May to mid-July. Not surprisingly, the Coastal Plain flight is a good bit earlier -- mid-April to mid-June. The very few Piedmont records are for late May and early June.

**HABITAT:** Generally a lake and pond species, or slow streams; muddy bottom waters preferred.

**BEHAVIOR:** Occurs around ponds and lakes, perching on the ground or on vegetation around the water's edge.

**COMMENTS:** This species has an unusual bimodal range, being found mainly in the mountains and the northern Coastal Plain, with hardly any records in the intervening Piedmont. And, in this last province, it appears to be limited, as far as known, to just counties bordering VA, as there is a heavy amount of field work in the Wake, Durham, and Orange county region (with no records). Unless data are uncovered soon for the Bladen County "record", we will likely remove it from the database; this county lies far to the south of any other known records.

## *Dromogomphus armatus* Southeastern Spinyleg



**DISTRIBUTION:** Limited in NC to the Sandhills and adjacent southern Coastal Plain near the SC border. NC lies at the northern edge of the species' range.

**ABUNDANCE:** Uncommon in the Sandhills; less numerous -- presumably rare to uncommon -- in the adjacent Coastal Plain (Robeson, Bladen, and Columbus counties) to the southeast. Surprisingly, all daily counts are just of one to two individuals.

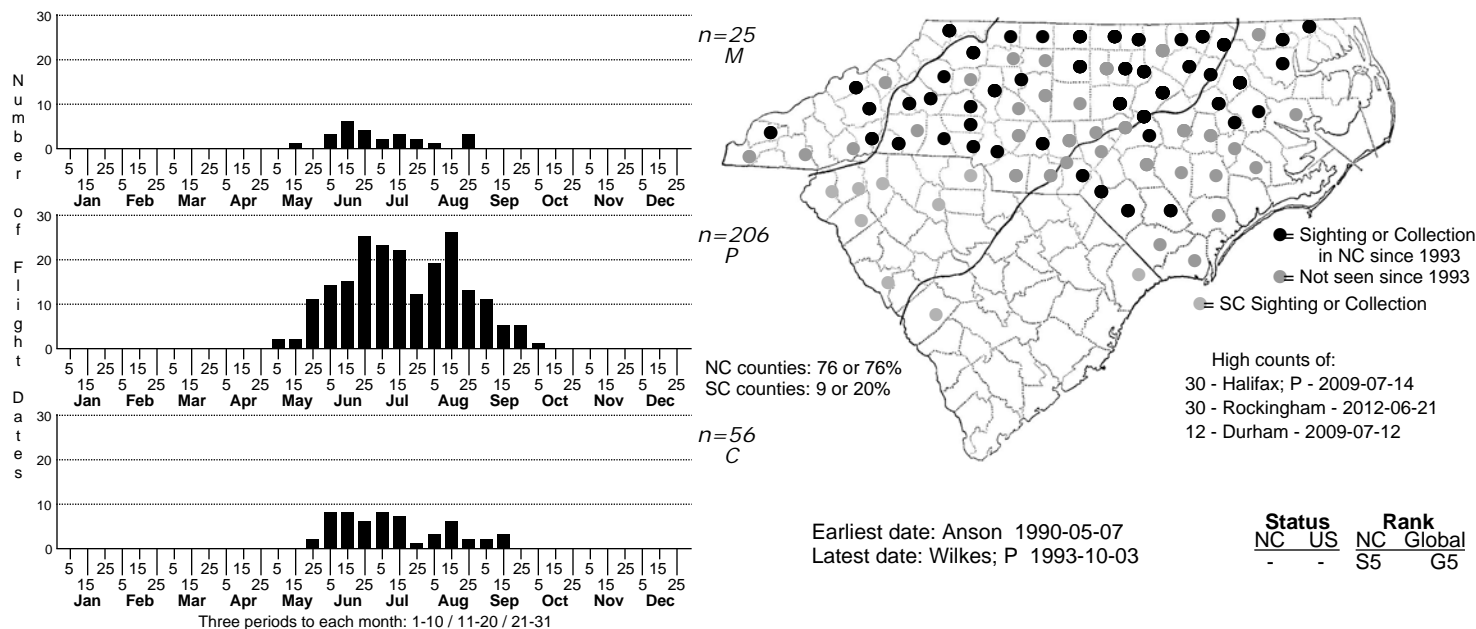
**FLIGHT:** Summer into early fall. Records occur between mid-June and mid-October; however, most are from late July to late September.

**HABITAT:** Breeds in seeps, springs, small streams, etc. Presumably uses pocosin streamheads in the Sandhills.

**BEHAVIOR:** Can be seen flying along roads, trails, or brushy areas near wetlands. Perches frequently, both on the ground and on vegetation.

**COMMENTS:** This is one of the Sandhills' most spectacular odonates. Adults are large, and the bright rusty-orange club easily draws attention. Though a handful of other clubtails flying at that season have orange clubs, they typically are restricted to water and seldom perch on sand roads and other relatively open places.

## *Dromogomphus spinosus* Black-shouldered Spinyleg



**DISTRIBUTION:** Nearly statewide, though of spotty occurrence at both ends. Apparently absent from the extreme eastern counties (no records east of Gates, Bertie, Beaufort, and Jones counties). Also, there are records for only half of the mountain counties.

**ABUNDANCE:** Common over the Piedmont; fairly common in the upper Coastal Plain, and uncommon in the mountains. Much less numerous in the eastern Coastal Plain. This is one of the more numerous of the clubtails in the state, particularly in the Piedmont.

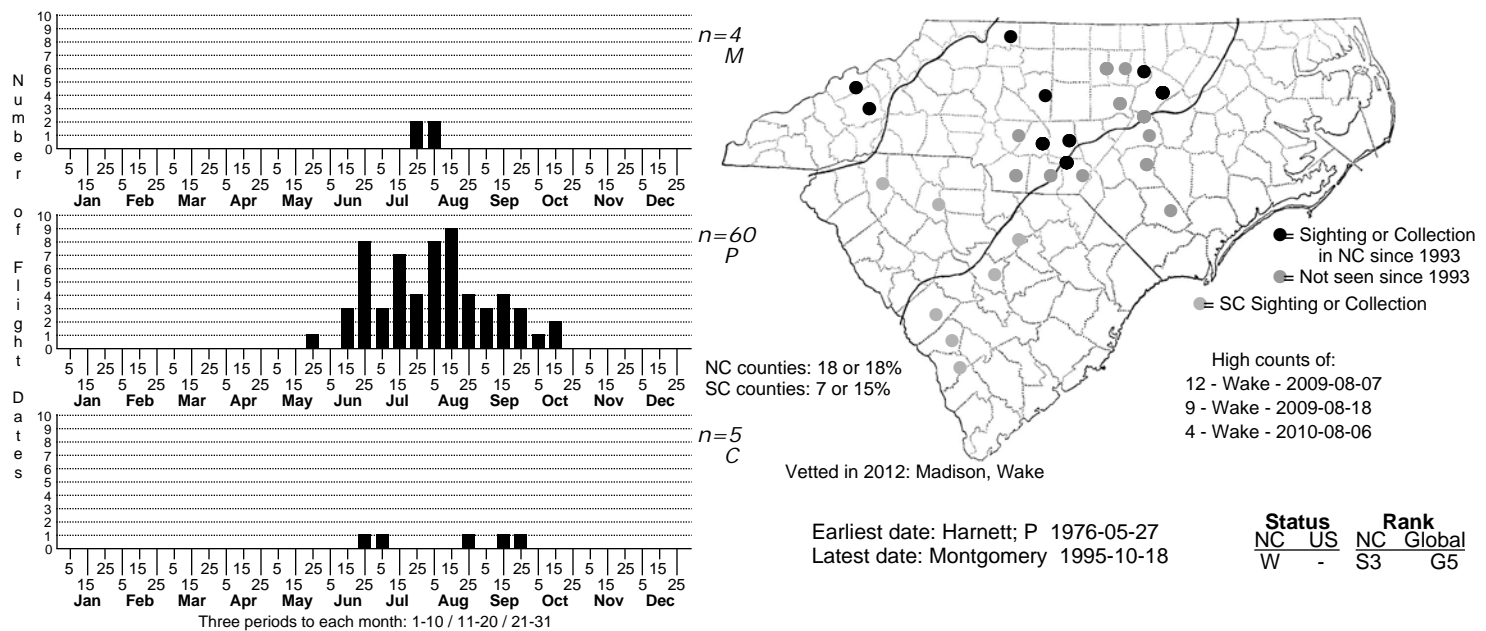
**FLIGHT:** Fairly wide spread of flight dates for a clubtail -- early May to early October in the Piedmont. Probably the same flight period in the Coastal Plain, though dates only span from late May to mid-September. The mountain flight occurs from mid-May to at least late August.

**HABITAT:** Widespread choice of breeding habitats, from rivers and streams, to lakes and ponds. More tolerant of disturbed habitats than most clubtails.

**BEHAVIOR:** One of the more conspicuous or easily seen clubtails in NC (along with Lancet and Ashy clubtails). Adults frequently perch flat on the ground on sunny trails, dirt roads, or vegetation, where they can be easily studied. One does not have to head for a pond, large creek, or river to see this species.

**COMMENTS:** This is a large and striking dragonfly. Immatures and adult females have conspicuous yellow sides to the thorax, whereas the adult males are more lime green on the sides of the thorax. The very thick black "shoulders" at the front of the thorax are clinching marks. Also, as the common name indicates, the spinylegs indeed have spiny projections on the very long pair of hind legs.

## *Erpetogomphus designatus* Eastern Ringtail



**DISTRIBUTION:** Mainly found in the Piedmont and the adjacent Sandhills and southwestern Coastal Plain, but finally (2011) found in the mountains -- in Madison and Buncombe counties. (Range maps in references tend to show the western 60-80% of the state within the range, and Paulson [2011] even shows the entire state within the range).

**ABUNDANCE:** Rare to locally uncommon in the eastern half of the Piedmont. Rare in the Coastal Plain portion of the range, and obviously rare and local in the lower elevations of the mountains and in the western Piedmont.

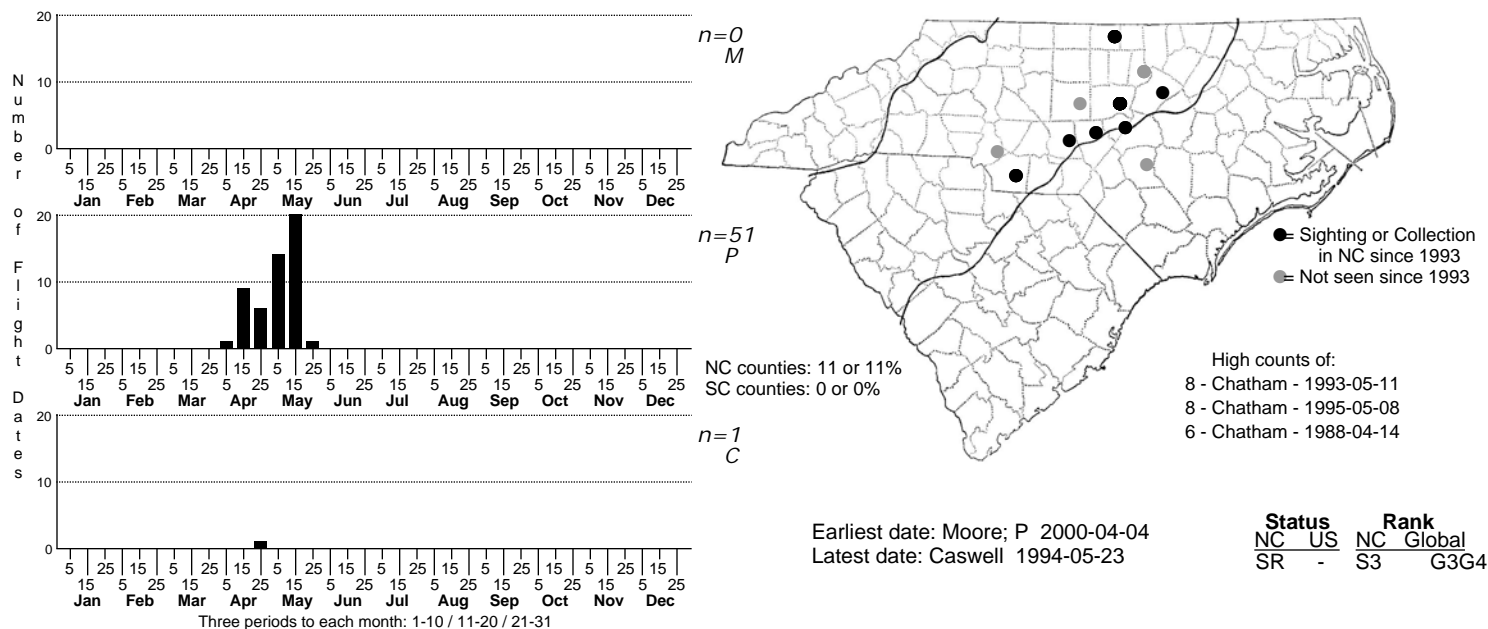
**FLIGHT:** The flight in the Piedmont occurs between late May and mid-October, with the Coastal Plain flight slightly narrower in time -- about late June to late September. The mountain records fall in a narrow window between late June and early July, though the flight period there is certainly wider, and likely extends into August.

**HABITAT:** Generally rivers and wide streams, especially with riffles and somewhat fast flow.

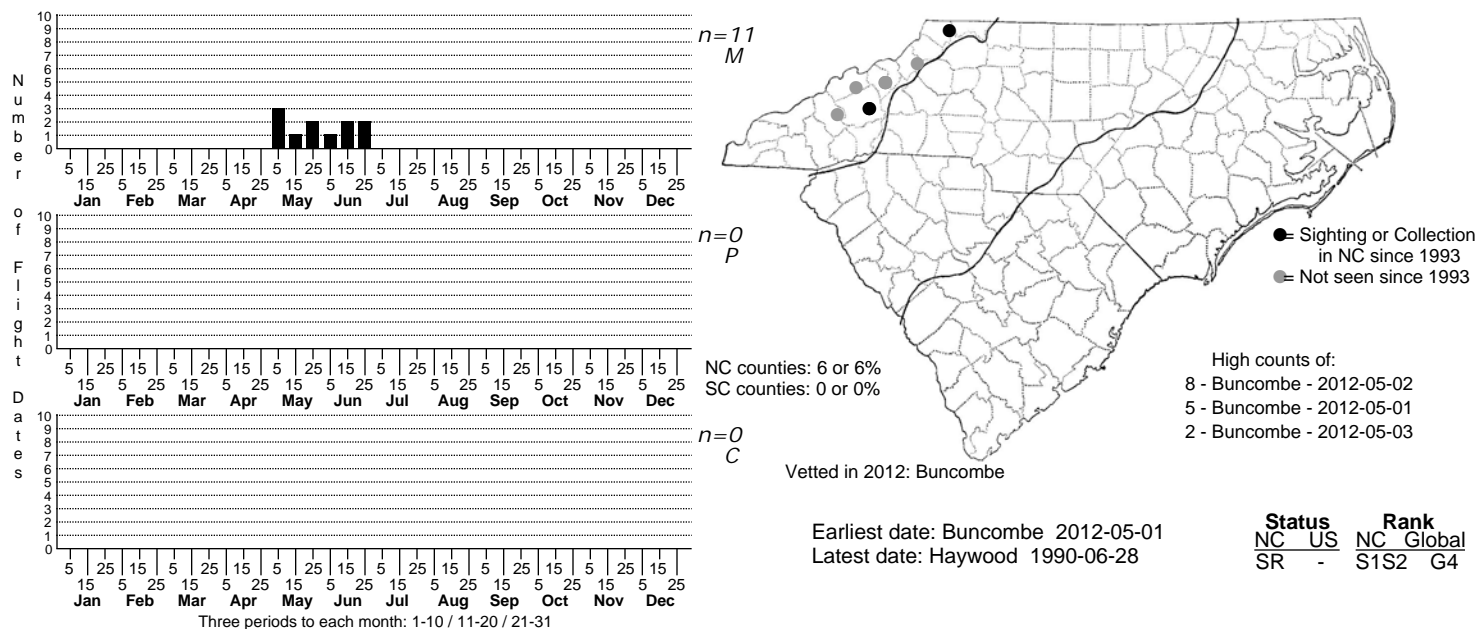
**BEHAVIOR:** Normally stays very close to rivers and streams; occasionally strays to open fields, jeep roads, etc., well away from flowing waters. Perches on low vegetation, banks, or rocks along shores of rivers and streams.

**COMMENTS:** Until a few years ago, there were very few recent records for this "widespread" species. However, in the past several years there have been numerous records from the Neuse River just below the Falls Lake dam, and a handful of records from Buncombe and Madison counties, mainly not far from the French Broad River. This is one of the more "colorful" of the clubtails, and for that reason, may be the easiest clubtail in the state to identify.

## *Gomphus abbreviatus* Spine-crowned Clubtail



## *Gomphus adelphus* Mustached Clubtail



**DISTRIBUTION:** Mountains only; known from just six counties, in the northern and central portions of the province. As expected from the state range map, this is a Northern species, ranging from Canada to northern GA (one record).

**ABUNDANCE:** Not well known, as it typically flies late in the day. Apparently rare to perhaps at least locally uncommon; there are several counts of at least five individuals in a day. Obviously very rare, at best, south of Buncombe and Haywood counties.

**FLIGHT:** A mid-spring to early summer flight. Early May to late June.

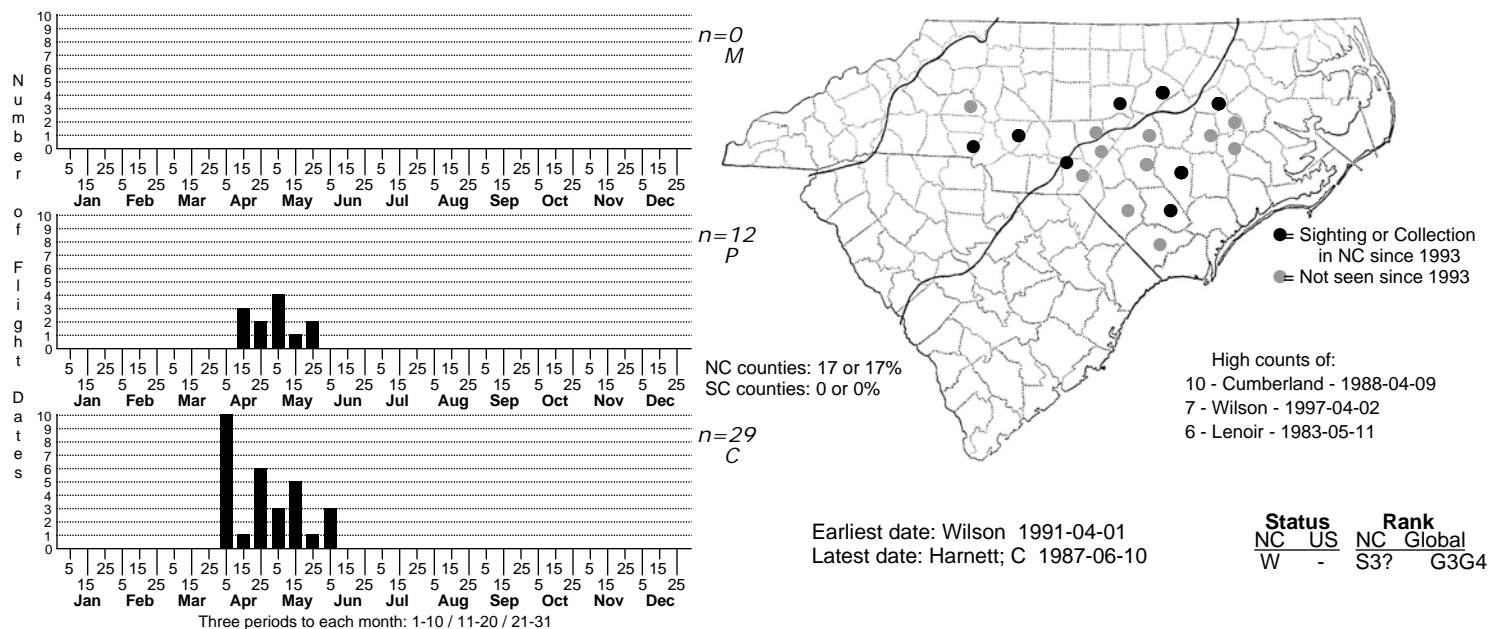
**HABITAT:** Rivers to small streams, where there are riffles or rapids. Occasionally at lakes.

**BEHAVIOR:** The species is most active in late afternoon. Adults may perch on rocks, shorelines, and leaves near rivers and creeks.

**COMMENTS:** This is one of many montane species of dragonflies that is poorly known to most state biologists; the species is likely found mainly with a purposeful search, late in the day. Vin Stanton has a number of recent photographic records from Buncombe County in 2011-12, to add a new county record, though within the previously known range of the species.



## *Gomphus apomyius* Banner Clubtail



**DISTRIBUTION:** Lower and south-central Piedmont, and the southern and central Coastal Plain, but absent from coastal counties. Ranges north to Catawba, Chatham, Wake, and Wilson counties. NC lies at the northeastern end of the range.

**ABUNDANCE:** Uncommon, at least in former years; might now be better stated "rare to uncommon and somewhat poorly known". Perhaps the species has declined in recent decades. Dunkle (2000) calls the species "scarce", and Beaton (2007) calls it "rare and local" in its range in Georgia.

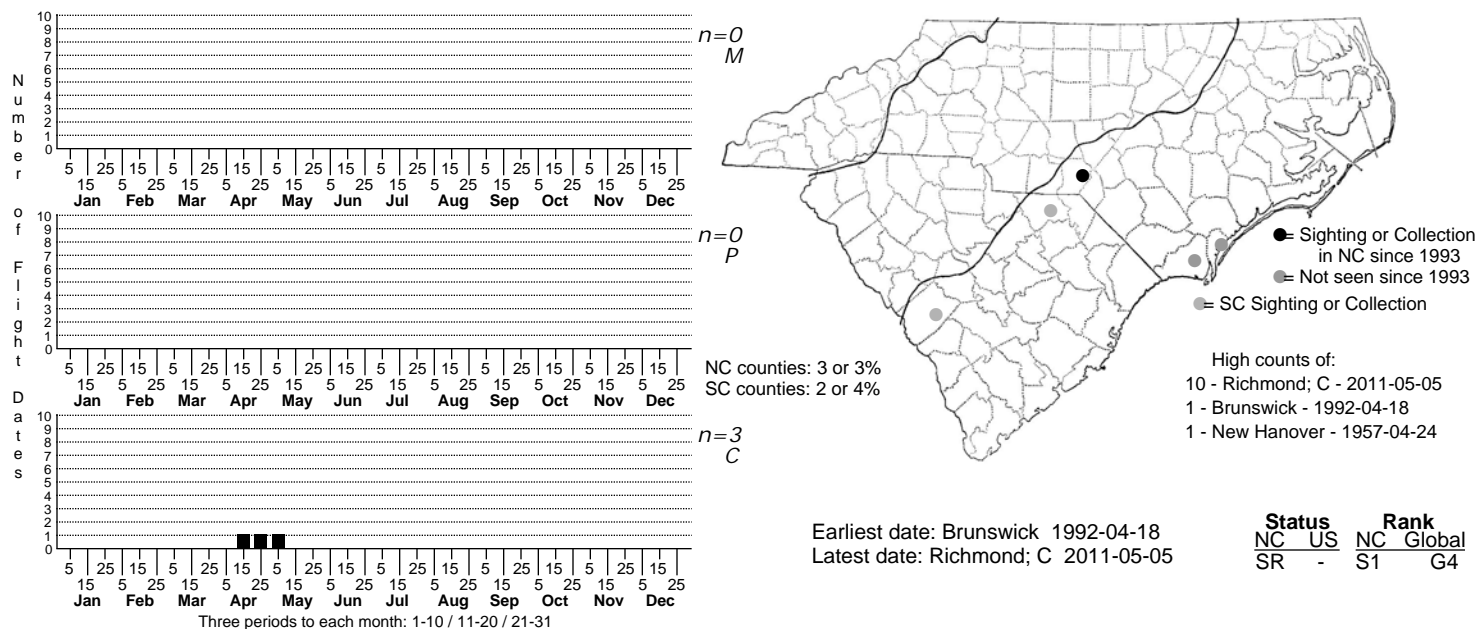
**FLIGHT:** Ranges from very early April to early June in the Coastal Plain. In the Piedmont, the flight appears to be slightly narrower -- mid-April to late May.

**HABITAT:** Generally in clean streams and rivers with sandy or gravelly bottoms.

**BEHAVIOR:** Males perch on rocks or other perches close to rivers and streams. They are most active early in the morning and toward dusk.

**COMMENTS:** This is one of the smaller clubtails (only up to 1.5 inches in length). Males have a very wide club. Despite its range occurring close to the locations of many biologists, it is poorly known to most persons, and thus the NC Natural Heritage Program has the species on its Watch List. As the species does not appear to be overly difficult to identify, we must assume that this species has declined in the state since the time of Cuyler's collecting efforts; there are very few reports since the 1980s.

# *Gomphus australis* Clearlake Clubtail



**DISTRIBUTION:** Extreme southeastern Coastal Plain in Brunswick and New Hanover counties, as well as Richmond County, in the Sandhills region. As would be surmised from the range, NC lies at the northern edge of the species' range. The Richmond County record (photographs taken in 2011) extends the range slightly northward, though the species has been recorded from adjacent Chesterfield County, SC.

**ABUNDANCE:** Presumably scarce. Range and abundance between the lower Coastal Plain and the Sandhills (Richmond County) is unknown, but SC has no records away from the Sandhills/Fall Line counties. Interestingly, 10 individuals were seen at the Richmond County site.

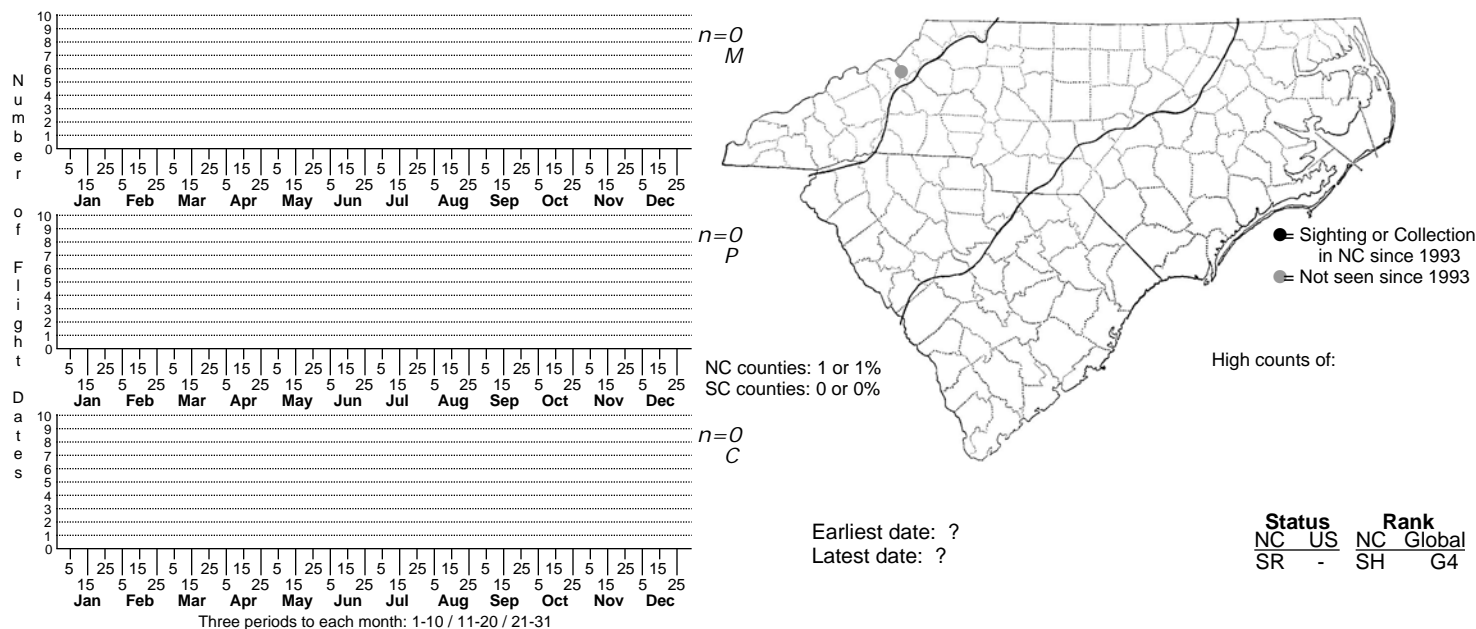
**FLIGHT:** Fairly early in the season: the three dates for the state are from 18 April to 5 May. Presumed to occur from early or mid-April to perhaps mid-May.

**HABITAT:** Lakes with sand bottoms and heavy vegetation, often with lily pads. The Richmond County site is a fish hatchery, with numerous, small, man-made pools.

**BEHAVIOR:** Males perch on lily pads and other vegetation close to the lakes and ponds.

**COMMENTS:** Both Dunkle (2000) and Beaton (2007) mention the association of the species with lily pads. Thus, it suggests that biologists should try to fill in the gap between Richmond and Brunswick counties by searching out ponds with many lily pads.

*Gomphus borealis* Beaverpond Clubtail



**DISTRIBUTION:** Known from just one mountain county -- Mitchell. This is the southern end of the range of this Northern species.

**ABUNDANCE:** Considered to be of historical occurrence in the state, the only odonate considered by the NC Natural Heritage Program to be perhaps extirpated from the state.

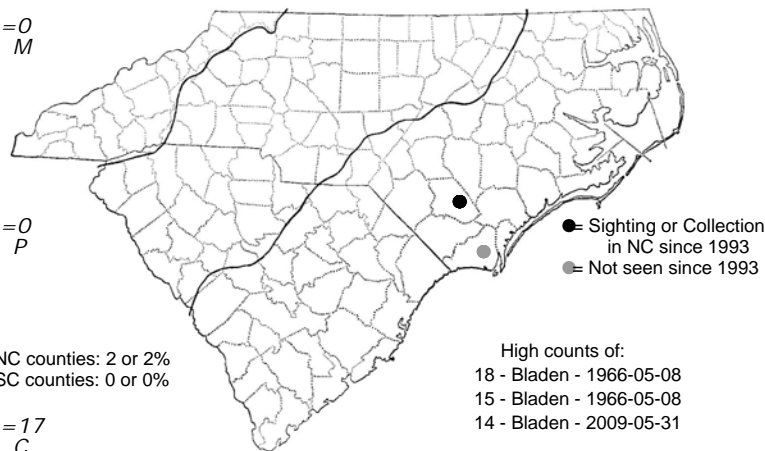
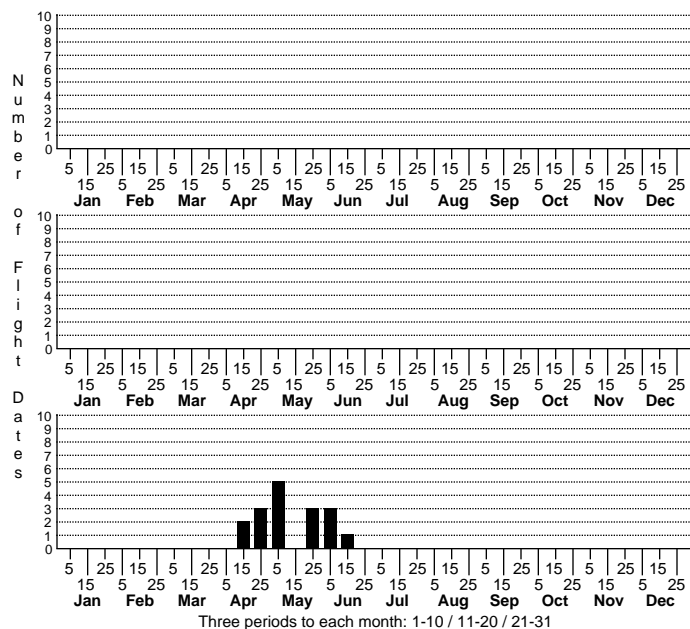
**FLIGHT:** Probably May into July, inferred from Dunkle (2000).

**HABITAT:** Lakes, ponds, and large, slow-moving streams. Mainly with mud bottoms. Beaver ponds are only one of many habitats used in its range.

**BEHAVIOR:** Males perch on the ground or vegetation near ponds.

COMMENTS: Duncan Cuyler (pers. comm. to the NC Natural Heritage Program) suggested an historical status for the species, as he had searched for it a few decades ago, and could not find the species. There are a handful of other dragonflies and damselflies with no recent records (indicated by only light green color on the county range maps); however, biologists consider those to still be present, as likely there has been little or no search of known sites for them. Sadly, we do not have any data for the only record(s) known from the state.

# *Gomphus cavillaris* Sandhill Clubtail



Earliest date: Bladen 2010-04-15  
Latest date: Brunswick 1987-06-11

Status		Rank	
NC	US	NC	Global
SR	-	S1	G4

Synonym: *Gomphus cavillaris brimleyi*  
Other Name: Brimley's Clubtail - *Gomphus cavillaris brimleyi*

**DISTRIBUTION:** Extreme southeastern corner of the state (Bladen and Brunswick counties only); disjunct from the main part of the range in FL. Surprisingly, not yet known from SC or GA.

**ABUNDANCE:** Presumed to be very rare and local in NC, but numerous at one or more sites in Bladen County. Dunkle (2000) calls it "common" in FL, but the fact that the species hasn't been found in SC or GA suggests that it must be quite scarce in NC.

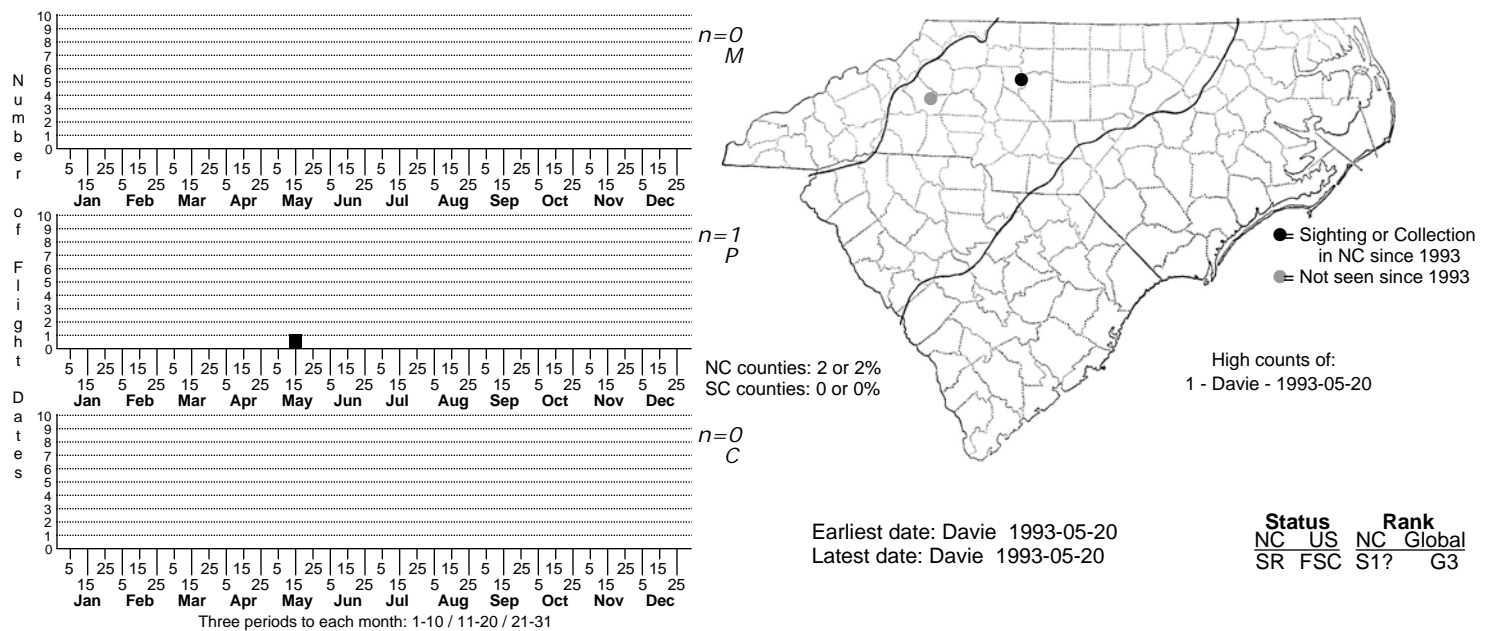
**FLIGHT:** Spring to very early summer. NC dates fall between mid-April and mid-June.

**HABITAT:** Sand-bottomed lakes. The individuals noted on 3-4 June were seen along the shoreline of a natural lake, perching on the sand.

**BEHAVIOR:** Males perch on the ground or in vegetation near lakes.

**COMMENTS:** The subspecies in NC is *G. cavillaris brimleyi*. This subspecies is also found in the panhandle of Florida; the nominate subspecies (*G. c. cavillaris*) is found throughout the FL peninsula. Ed Corey saw and photographed several individuals on 3-4 June 2008 at bay lakes in Bladen County, to confirm that the species still has a presence in NC.

## *Gomphus consanguis* Cherokee Clubtail



**DISTRIBUTION:** Only known from two counties in the western Piedmont/foothills. This species has a small range in the southern Appalachians, from southwestern VA into northern AL. It is odd that there are no records yet from the NC mountain counties, and because it is a southern Appalachian species, it obviously must occur in the mountains only at very low to low elevations (perhaps below 2,000 feet).

**ABUNDANCE:** Seemingly very rare, but part of the scarcity of records might be due to difficulty of identification (other than through collecting). Beaton (2007) calls it "Rare to locally uncommon" in its small GA range.

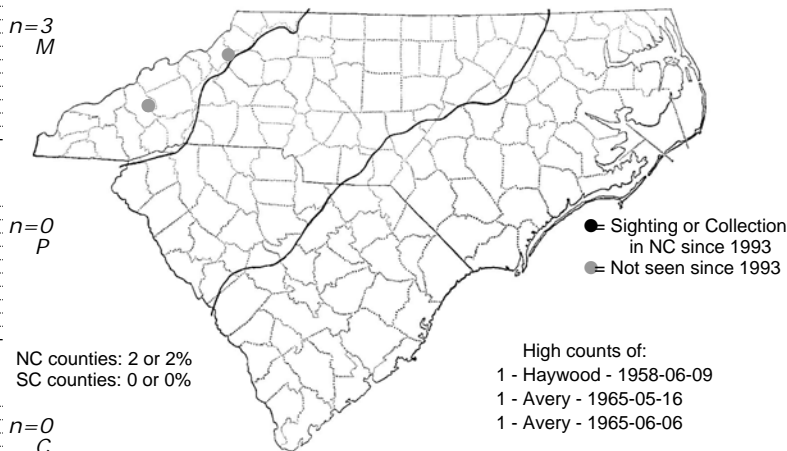
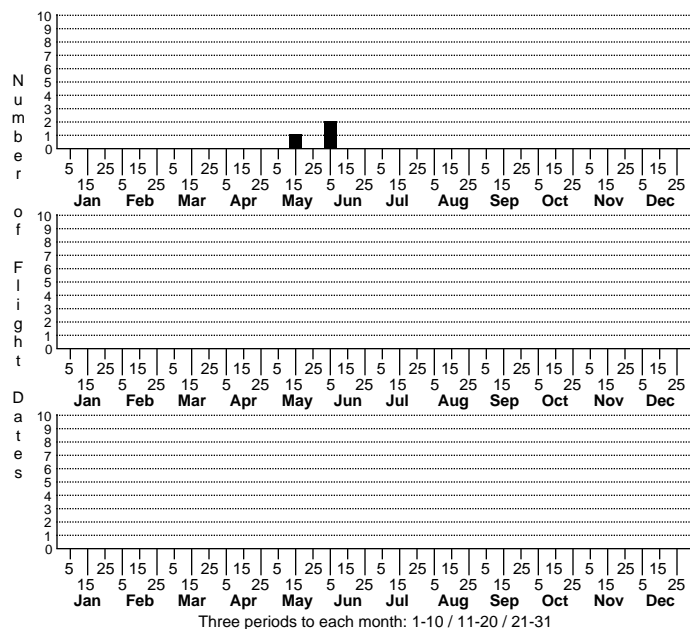
**FLIGHT:** Late May to mid- or late June in GA (Beaton 2007). The only record available in NC with a date is for 20 May, which seems surprisingly early (compared with GA flight dates). The NC flight in the central/western Piedmont of NC thus might start in mid-May, but is expected to extend well into June.

**HABITAT:** Only near small streams in forests, often near springs, or where spring-fed.

**BEHAVIOR:** Males perch close to such streams and springs, and have a slow flight close to the water. Both Beaton (2007) and Dunkle (2000) call the species "unwary" near these creeks.

**COMMENTS:** This is one of many poorly known clubtails in NC. Few biologists are actively searching for odonates in the mountains and upper Piedmont, so its status will probably be poorly known for years. Add to this the similarity in appearance to the Sable Clubtail, and it is understandable that there are no certain recent records. However, there have been observations and photos in the past several years in Madison County of individuals that were one of these two species but that couldn't be confirmed. Note that NatureServe's global rank is G3; thus, any and all records are of great interest.

# *Gomphus desertus* Harpoon Clubtail



Earliest date: Avery 1965-05-16  
Latest date: Haywood 1958-06-09

Status	Rank
NC US	NC Global
SR -	SH G4

**DISTRIBUTION:** Mountains only, where recorded only from two counties (Avery and Haywood). NC is at the southern end of the range, as the species does not range into the GA mountains. The species ranges north into southeastern Canada.

**ABUNDANCE:** Very rare (presumably), as records only for two mountain counties.

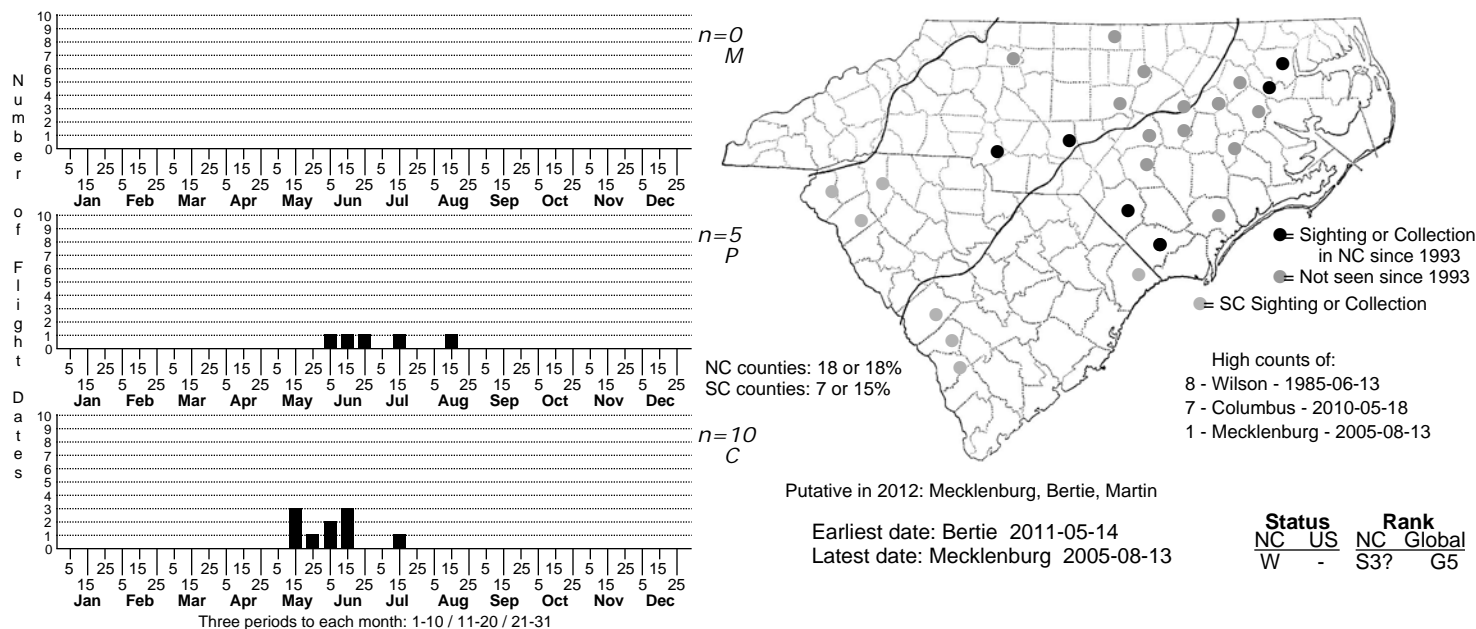
**FLIGHT:** May into June. The three dates available for NC fall from 16 May to 9 June.

**HABITAT:** Breeds at rocky streams and rivers.

**BEHAVIOR:** Males perch on rocks in rivers and streams, or along shores and the ground near the water.

**COMMENTS:** This is still another very poorly known dragonfly in NC. Sadly, the last known record for NC is from 1965, and thus the NC Natural Heritage Program has changed the NC Rank from S1? to SH (historical). This does not mean that it is considered "likely extirpated", as suitable habitat is presumably still common. But, much field work for clubtails in the mountains is greatly needed, especially by persons seeking out rare species by netting them along creeks and rivers.

## *Gomphus dilatatus* Blackwater Clubtail



**DISTRIBUTION:** Scattered over the central and western Coastal Plain, and of spotty distribution in the eastern half of the Piedmont. Absent in the mountains and apparently from the northeastern and far eastern portions of the Coastal Plain.

**ABUNDANCE:** Rare in the upper Coastal Plain, and very rare in the Piedmont and central Coastal Plain. Near absence of recent records is puzzling, considering the fairly wide range of the species in the state.

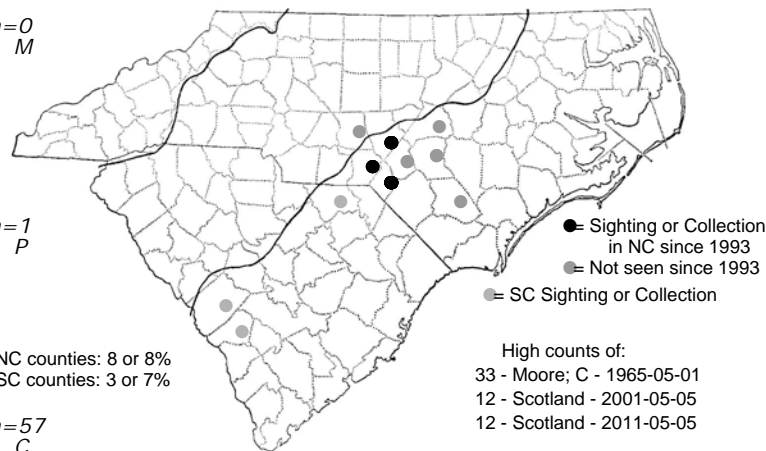
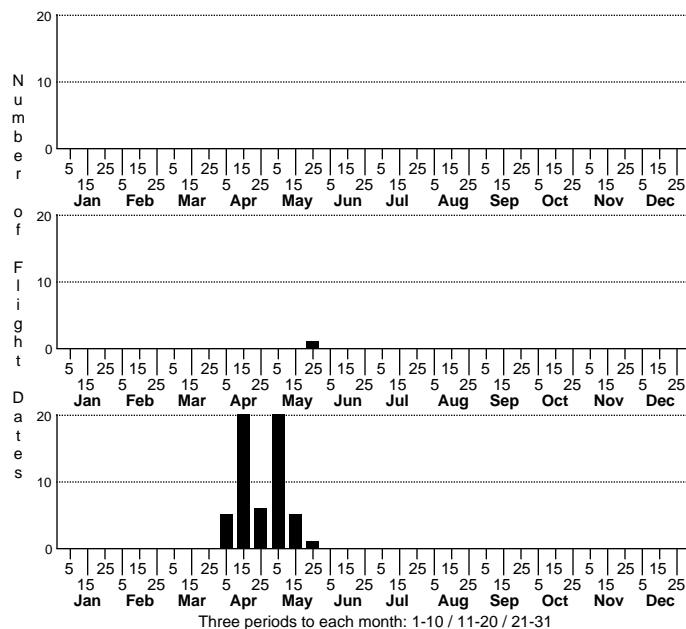
**FLIGHT:** Mid-May to at least mid-July in the Coastal Plain, and from early June into August in the Piedmont (though the late date is a sight record only).

**HABITAT:** Slow-moving rivers or streams with sandy or silty bottoms. Favors blackwater rivers, as the common name suggests, as opposed to muddy or brownwater rivers.

**BEHAVIOR:** Males perch on leaves or branches close to the water, or over the water.

**COMMENTS:** This is one of the larger clubtails, and the wide club also adds to its striking appearance. However, it can be confused with the Cobra Clubtail. Even so, it is not often seen in NC, and thus the NC Natural Heritage Program considers it to be a Watch List species.

## *Gomphus diminutus* Diminutive Clubtail



Earliest date: Scotland 1991-04-03  
Latest date: Montgomery 1970-05-27

Status	Rank
NC US	NC Global
W -	S3S4 G3

**DISTRIBUTION:** Essentially only the Sandhills region, plus the adjacent southern Coastal Plain, east to Bladen County. NC lies at the northeastern edge of the species' range. The species has one of the more limited ranges for a dragonfly -- primarily along the Fall Line sandhills from NC, through central SC, to extreme eastern GA.

**ABUNDANCE:** Uncommon to locally fairly common in the Sandhills, but probably rare to the east.

**FLIGHT:** Spring season only; early April to late May.

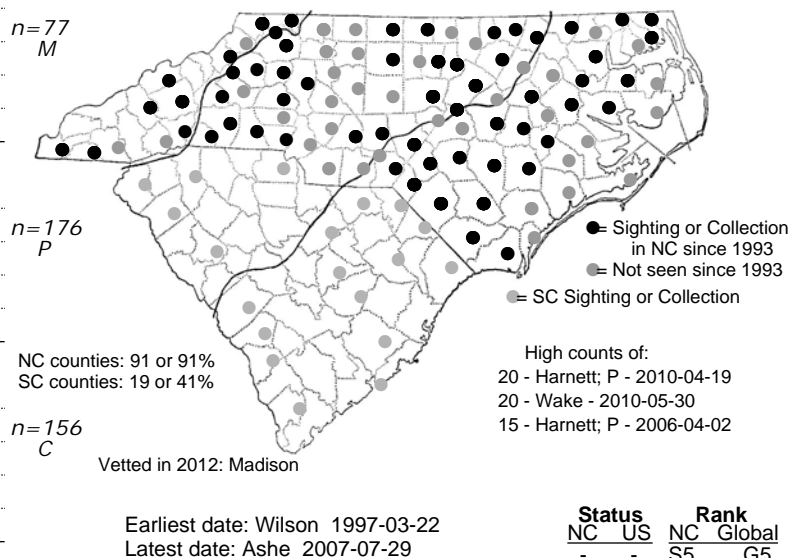
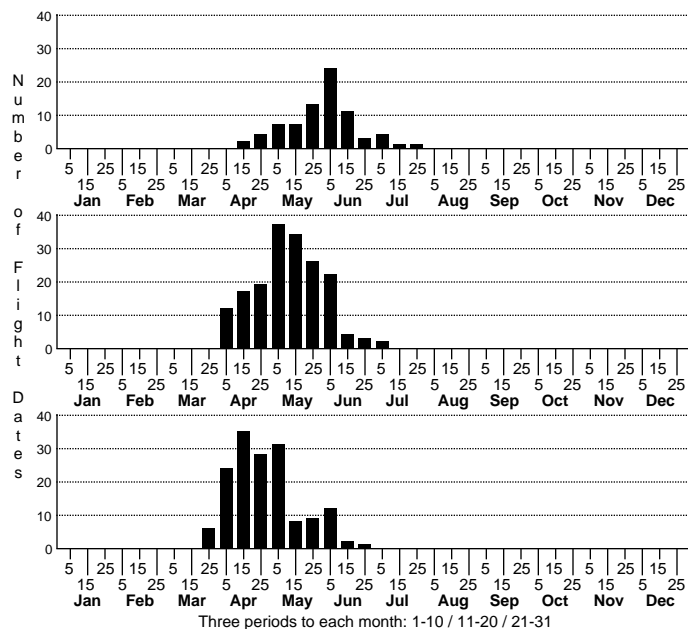
**HABITAT:** Sunny margins of lakes, ponds, pools, and other slow-moving water, often around sphagnum moss or other "boggy" ground.

**BEHAVIOR:** Adults perch on the ground in the boggy places or dirt/ground nearby. Probably do not stray too far from such wet areas.

**COMMENTS:** In the Sandhills, this species is not too difficult to find, if one walks along the boggy, open margins of beaver ponds or man-made ponds, especially looking near sphagnum moss. Wet spots in powerline clearings can also have the species. It is one of the smaller clubtails, appearing similar at a glance to the much more common Lancet Clubtail, but the Diminutive (as the common name implies) is even slimmer and slightly shorter than the Lancet.



## *Gomphus exilis* Lancet Clubtail



**DISTRIBUTION:** Unlike most of the other clubtails in NC, this species ranges throughout the state, occurring in essentially all counties, though there are no records for a handful of mountain and eastern Coastal Plain counties.

**ABUNDANCE:** Common and widespread. Generally the most common and often seen clubtail over most of the state, especially in the Coastal Plain. Presumably not common in the higher mountains.

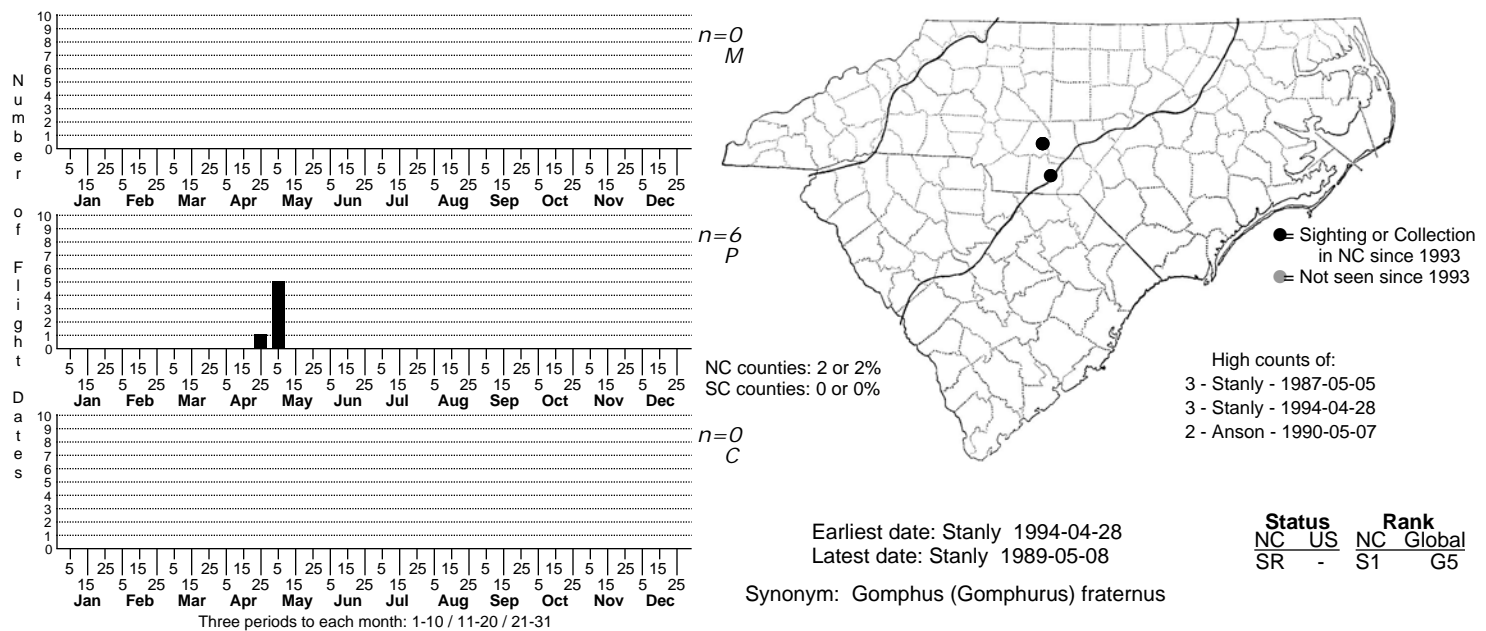
**FLIGHT:** Mainly in the spring. Downstate, from the end of March to late June, peaking in April and early May. In the mountains, the dates are from mid-April to late July, with a peak in early June.

**HABITAT:** Breeds mainly at ponds and small lakes, but also at streams.

**BEHAVIOR:** Adults frequently perch on dirt roads, sunny trails, and other bare areas, often a long way from water. They also perch on low vegetation near water.

**COMMENTS:** Over most of the state, this and the similar Ashy Clubtail are the most frequently observed clubtails by the average person, as both frequently perch on dirt roads and are rather unwary. Differentiating between the two can be somewhat tricky, though the Lancet is slightly smaller, slimmer, and brighter-colored, among several other field marks.

## *Gomphus fraternus* Midland Clubtail



**DISTRIBUTION:** Known only from one site -- the Rocky River -- in the lower Piedmont. The distribution in the state would suggest that this is a Southern species, but in fact it is a Northeastern species, ranging south mainly to MD, WV, and western TN.

**ABUNDANCE:** Undoubtedly very rare in NC, as it is known from just a single body of water.

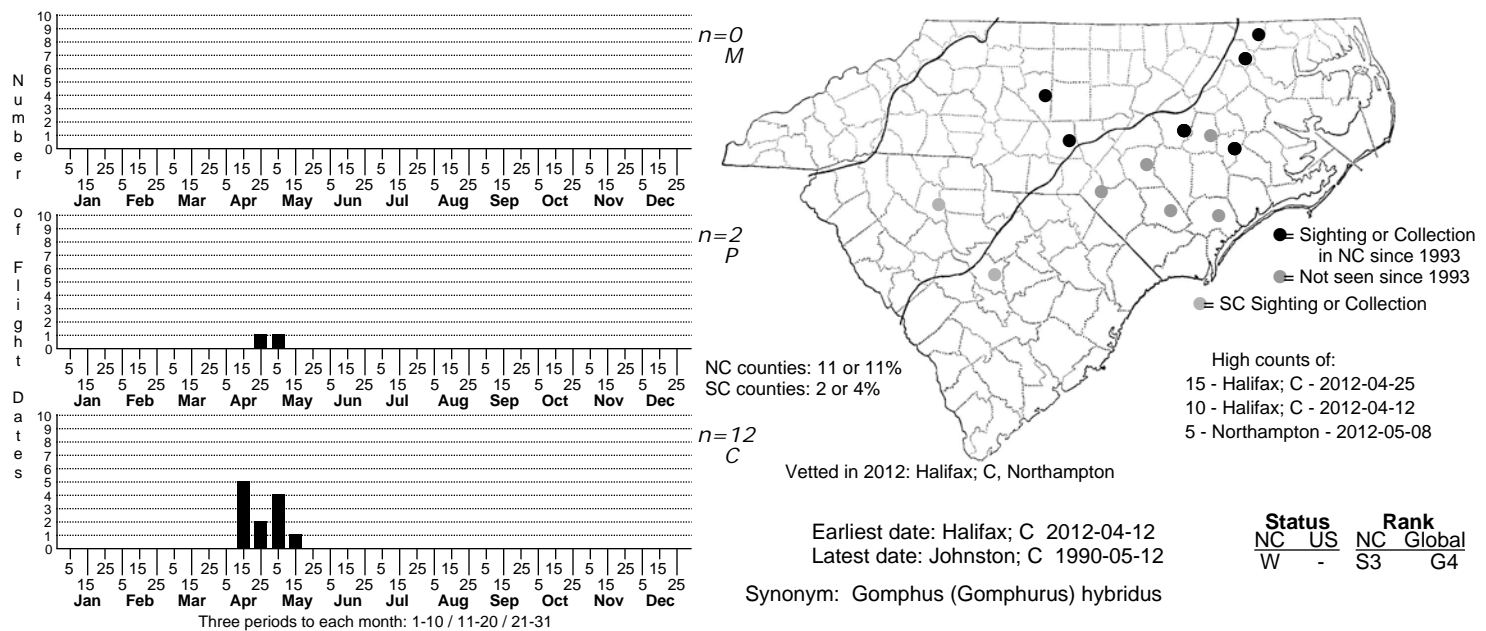
**FLIGHT:** All of the collection dates fall between 28 April and 8 May. Nonetheless, it is assumed that adults are present for only a few weeks (at this site) -- late April to mid-May.

**HABITAT:** Breeds at fast flowing rivers and large streams.

**BEHAVIOR:** Perch on rocks or banks near rivers. References indicate that this is a very fast and strong flier, able to overtake and feed on other dragonflies.

**COMMENTS:** This is still another poorly known clubtail in NC. Its known state range -- two counties (Anson and Stanly) that border the Rocky River in the lower Piedmont -- is most unusual, as this is a Northeastern species. Does it not occur along the Flat, Eno, Haw, Cape Fear, and other rivers in the eastern Piedmont, where there has been more odonate field work? On the other hand, this is a difficult-to-identify species, unless a specimen is taken. In fact, photos of a clubtail from the Eno River in Orange County have been re-examined, and it was felt not to be a Midland Clubtail. (They were carried on this website as a "Midland" for several years.)

## *Gomphus hybridus* Cocoa Clubtail



**DISTRIBUTION:** Mainly the inner half of the Coastal Plain; scattered into the lower Coastal Plain in the southeastern region, and also at a few sites in the eastern and central Piedmont. The range in the Coastal Plain is expanding northward, as many new records came from the Roanoke River area in 2012; the species was previously known northward only to the Neuse River area. This is a Southern species, with NC lying at the edge of the range; VA has no records as yet.

**ABUNDANCE:** Common, at least locally, along the upper part of the Roanoke River (Halifax and Northampton counties). Seemingly uncommon and local elsewhere, as it is recorded from only nine other counties in NC in a fairly small range. Dunkle (2000) considers the species to be fairly common, whereas in GA Beaton (2007) say it is uncommon in the Coastal Plain but rare elsewhere.

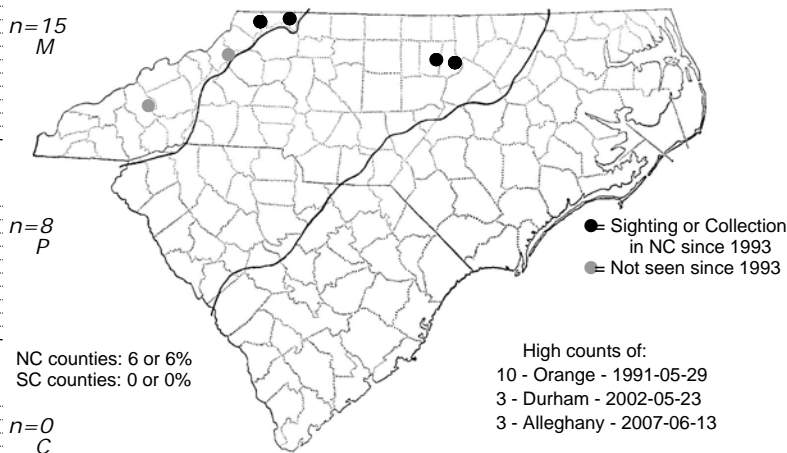
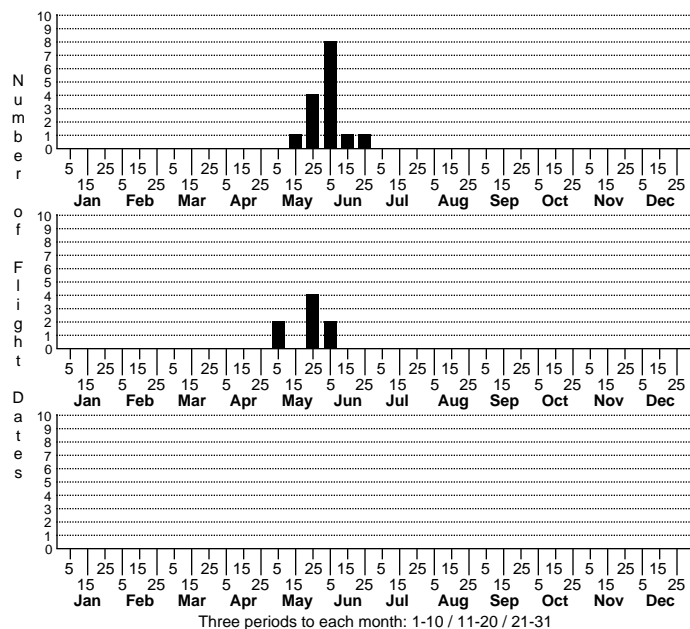
**FLIGHT:** Spring season only; the known dates in NC range from 12 April to 12 May.

**HABITAT:** Large or medium rivers with silty or sandy bottoms.

**BEHAVIOR:** Males spend little time in flight patrols over the water. Teneral individuals, as well as adults, often forage hundreds of yards away from rivers, such as along clearings, dirt tracks, and forest openings. It is an unwary species and can be easily approached on the ground.

**COMMENTS:** This is one of the relatively few clubtails to be found along slow-moving rivers and large creeks in the Coastal Plain. (The majority of clubtails are found in the mountains and Piedmont, and near faster waters.) Randy Emmitt photographed one, on 3 May, at Kinston in Lenoir County; and Beth Brinson extended the known range to the north with a photograph taken in Davidson County in 2008. Steve Hall and Harry LeGrand found it commonly on several spring dates in 2012 at sites within 1/2-mile of the Roanoke River, for a notable northward range extension. At this rate, it is expected to be found in VA in a few years. The species is still on the NC Natural Heritage Program Watch List, but as it is clearly moving northward, it is uncertain if it will remain on that list.

## *Gomphus lineatifrons*    Splendid Clubtail



Earliest date: Orange 2002-05-07  
Latest date: Alleghany 2006-06-22

Status		Rank	
NC	US	NC	Global
SR	-	S2	G4

**DISTRIBUTION:** Primarily the northern mountains, but a few other mountain records (and occurs in the mountains of northern GA). Also a handful of records for the northeastern Piedmont (Orange and Durham counties). Thus, it might occur along the entire northern Piedmont.

**ABUNDANCE:** Not rare in the northern mountains (uncommon to fairly common?), as Ted Wilcox has a number of photographs from Ashe and Alleghany counties on his website. Presumed to be rare in the remainder of the mountains, and in the northeastern Piedmont. Certainly very rare if not absent in the intervening northern Piedmont.

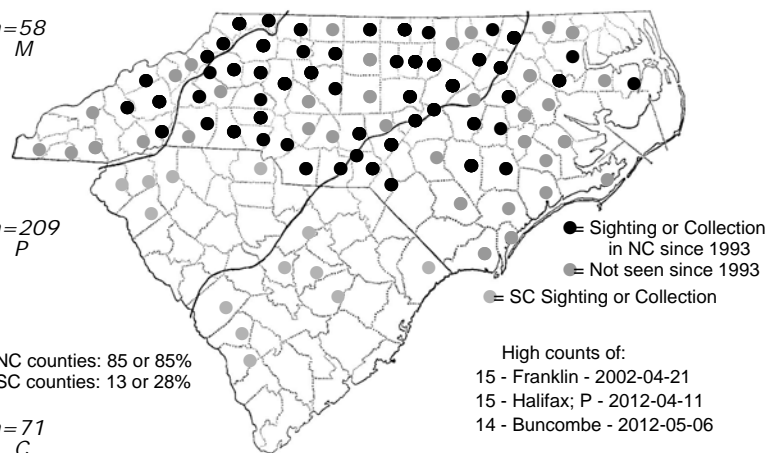
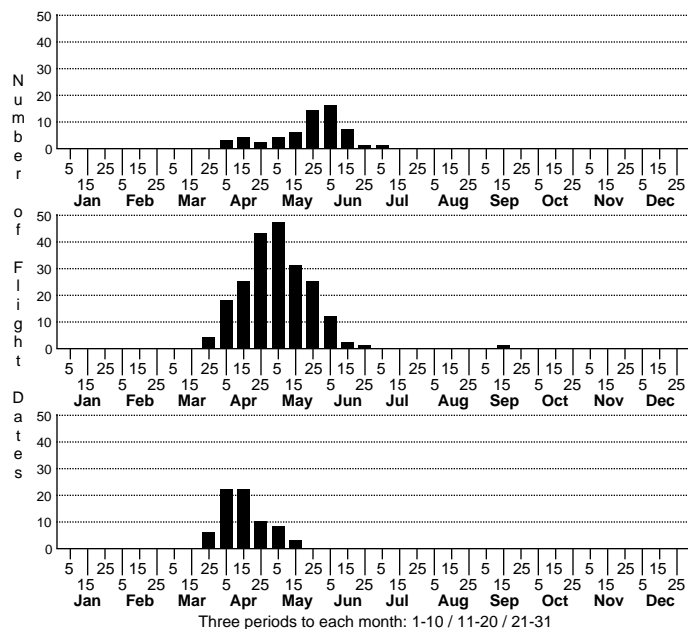
**FLIGHT:** Late spring and early summer. In the mountains from mid-May to late June; in the northeastern Piedmont, probably a week or two earlier, likely beginning in early May, and flying into June.

**HABITAT:** Breeds at clear rivers and creeks, with gravel bottoms.

**BEHAVIOR:** Males perch on rocks in the rivers or creeks, or on the ground or low vegetation nearby.

**COMMENTS:** This is a large and colorful clubtail; males have a large club. Beginners might mistake it for the common Black-shouldered Spinyleg, though that species has a much smaller club. In the northeastern Piedmont, nearly all records are from the Eno River. Though the NC Natural Heritage Program tracks the species, as there are records for only 6 counties, the fact that Wilcox has a number of records for the northwestern counties suggests that a Watch List status might be more appropriate.

## *Gomphus lividus* Ashy Clubtail



Earliest date: Durham 1990-03-22  
Latest date: Wake 2010-09-13

Status	Rank
NC US	NC Global
- -	S5 G5

**DISTRIBUTION:** Essentially statewide; throughout the mountains, Piedmont, and nearly all of the Coastal Plain, but possibly absent in the extreme eastern counties (no records east of Hertford, Tyrrell, and Craven counties).

**ABUNDANCE:** Common, except infrequent in the central and eastern Coastal Plain. Abundance equals that of the Lancet Clubtail in the Piedmont, exceeds the Lancet in the mountains, but is less numerous than that species in the Coastal Plain.

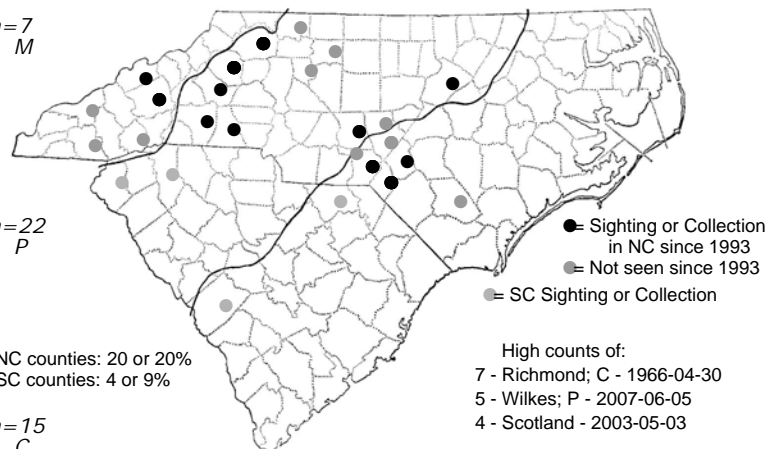
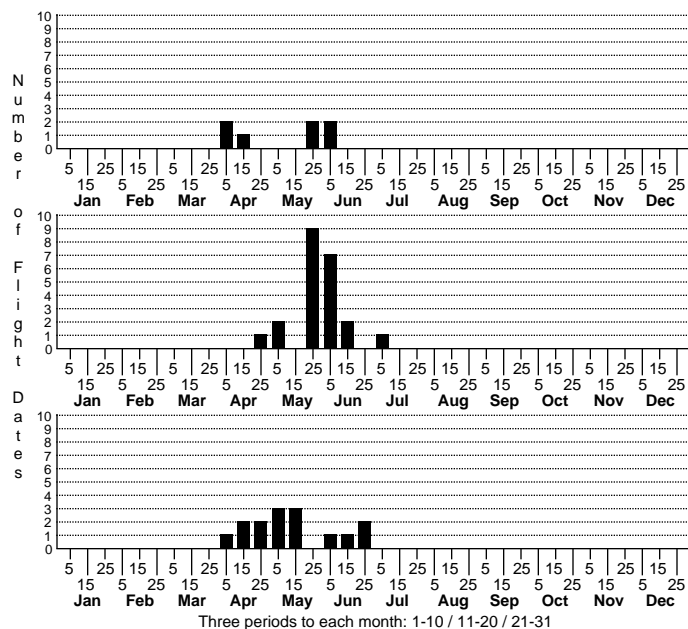
**FLIGHT:** Spring to very early summer season only, but a fairly wide spread of dates (for a clubtail). Generally from late March to late June, but mostly done downstate by late May (Coastal Plain) or mid-June (Piedmont).

**HABITAT:** Typically breeds at small creeks or rivers, less so at lakes and ponds.

**BEHAVIOR:** Behavior seems identical to the nearly equally numerous Lancet Clubtail. Adults commonly perch on dirt roads, trails, and other bare ground or fallen leaves, often far from water. Adults are unwary and easily studied through binoculars.

**COMMENTS:** Along with the Lancet, these are the most often seen clubtails in NC, typically found on most spring-season field trips to woodlands and fields with appropriate dirt roads or bare ground for perching. Ashy averages slightly longer and huskier in the abdomen than Lancet, and the thorax is slightly duller in Ashy.

## *Gomphus parvidens* Piedmont Clubtail



Vetted in 2012: Buncombe  
Putative in 2012: Swain

Earliest date: Buncombe 2012-04-05  
Latest date: Caldwell 1988-07-02

Synonym: *Gomphus parvidens carolinus*

Other Name: Sandhills Clubtail - *Gomphus parvidens carolinus*

Status		Rank	
NC	US	NC	Global
W	-	S3?	G4

**DISTRIBUTION:** Odd range in NC, probably owing to two separate subspecies being present. The nominate subspecies (*Gomphus p. parvidens*) occurs in the western half of the Piedmont and the southern mountains. The Sandhills subspecies (*G. p. carolinus*) occurs in the Sandhills region, with an outlying record from Bladen County. There is also a recent sight report for Wake County. It is not known if the species occurs in the intervening south-central Piedmont, though one would expect that it does.

**ABUNDANCE:** Rare to uncommon over the range, though there are records for most counties in the Sandhills. Occurs in rather low densities, with a peak daily count of just 7 individuals.

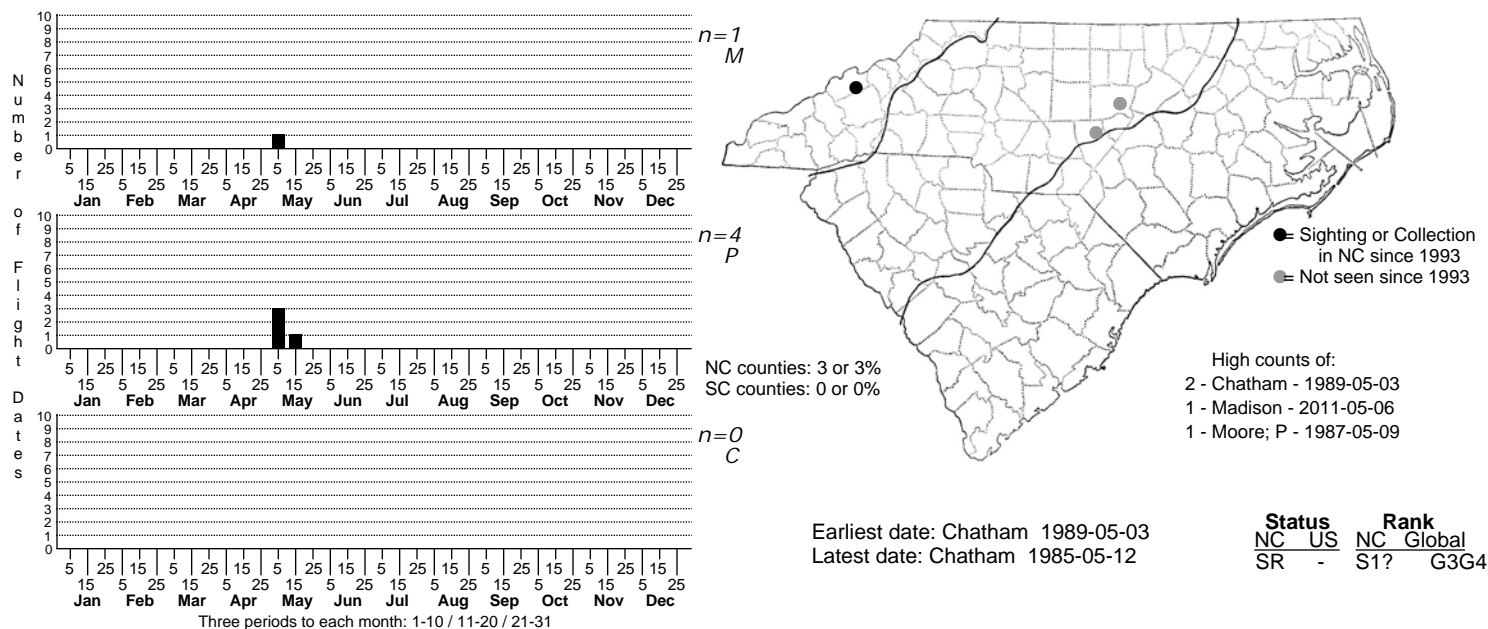
**FLIGHT:** Early April to late June, rarely to early July. Oddly -- perhaps because of the subspecies differences -- the mountain flight period starts about the same time as those downstate, and seemingly ends earlier; in most species, the flight in the mountains should be staggered later in starting and ending dates than those downstate.

**HABITAT:** Small or medium creeks, with sandy bottoms and well-vegetated banks.

**BEHAVIOR:** References indicate that adults seldom perch on the ground or dirt, but instead typically perch on low vegetation close to the water.

**COMMENTS:** The species is not well known in NC, in part because it is essentially absent from the northeastern Piedmont where more biologists live and study odonates. Nonetheless, based on its range in the state, it does not appear to be rare in at least parts of the range. More field work is needed in the southern Piedmont to determine the boundaries of the ranges of the two subspecies and to determine whether there actually is a small hiatus between their ranges. The NC Natural Heritage Program added the species to its Watch List in 2012.

## *Gomphus quadricolor* Rapids Clubtail



**DISTRIBUTION:** Primarily north and west of NC, ranging south to northern VA, eastern TN, and northern AL. A photo record from near the French Broad River in Madison County in 2011 slightly expands this range eastward. However, there are several eastern disjunct records from Chatham and Moore counties (essentially the Rocky and Deep rivers), from 1985-1989.

**ABUNDANCE:** Presumed very rare in the mountains, and its present-day occurrence in the eastern Piedmont is uncertain, though it might still be present.

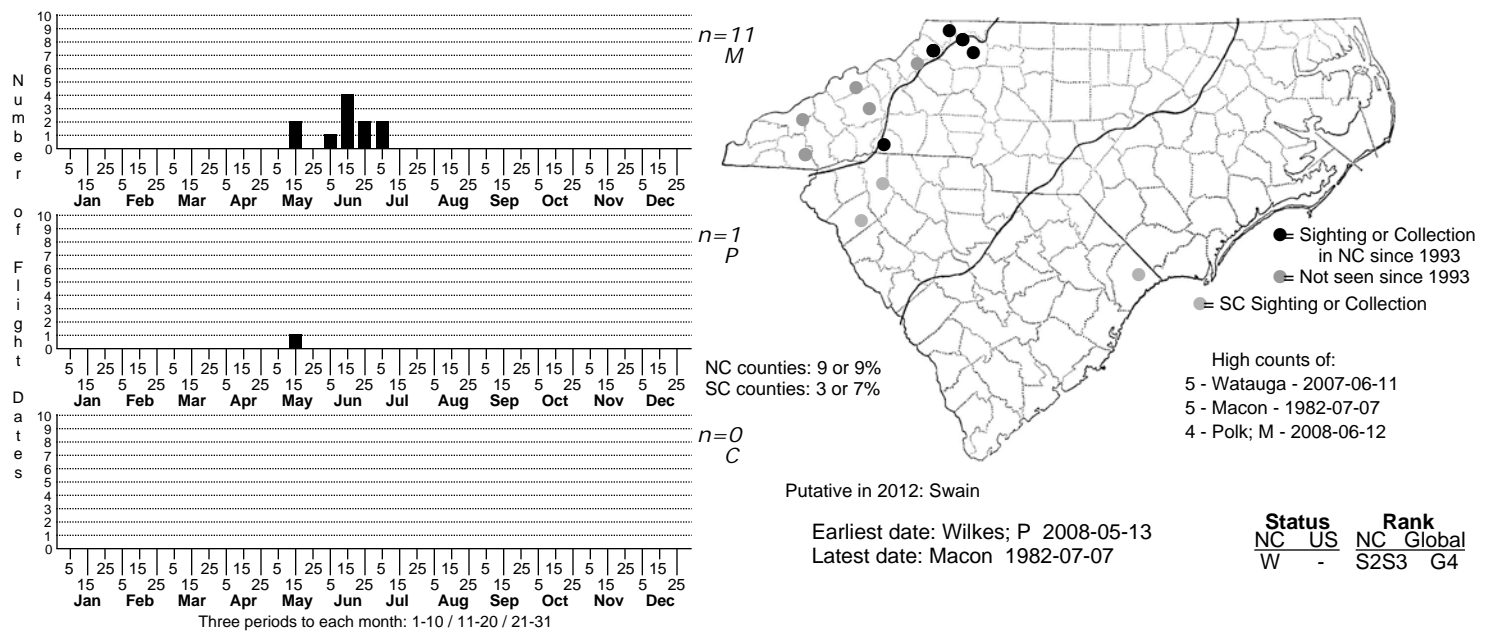
**FLIGHT:** A relatively short spring season flight. The flight dates from the eastern NC Piedmont are from 3-12 May, and the single NC mountain record falls in this narrow range also (6 May). The single GA record (in the mountains) is for 16 May. Certainly, a flight period for a species is longer than nine days, and thus it is likely the flight in NC occurs from early May to late May. Dunkle (2000) says "early May to mid-July" throughout the range; and Paulson (2011) lists "May-Jun" for KY.

**HABITAT:** Mainly at larger rivers with rocks and rapids.

**BEHAVIOR:** Males perch on rocks or vegetation near the rivers, but also on vegetation away from rivers.

**COMMENTS:** This is another very rare clubtail in the state. Its distribution is oddly disjunct, as the main part of the range is north and west of the state, south to VA and TN; only one record is known from GA. This is one of many clubtails that can be difficult to identify; multiple photos or specimens are almost certainly necessary for proper documentation.

## *Gomphus rogersi* Sable Clubtail



**DISTRIBUTION:** Mountains only (and apparently into the immediate foothills), throughout the province, as it is a Northern species yet does range into northern GA and AL.

**ABUNDANCE:** Probably uncommon, despite only nine known counties reported. As Beaton (2007) calls it "uncommon" in northern GA, and Dunkle (2000) calls it "common but secretive", we must assume that its abundance in NC is no more scarce than "uncommon".

**FLIGHT:** A mid-spring to early summer flier; recent occurrences from mid-May to the end of June. Interestingly, older collection dates fall from 17 June to 7 July. Thus, perhaps owing to global warming, the species is flying earlier in recent decades. The overall flight in the state is mid-May to early July.

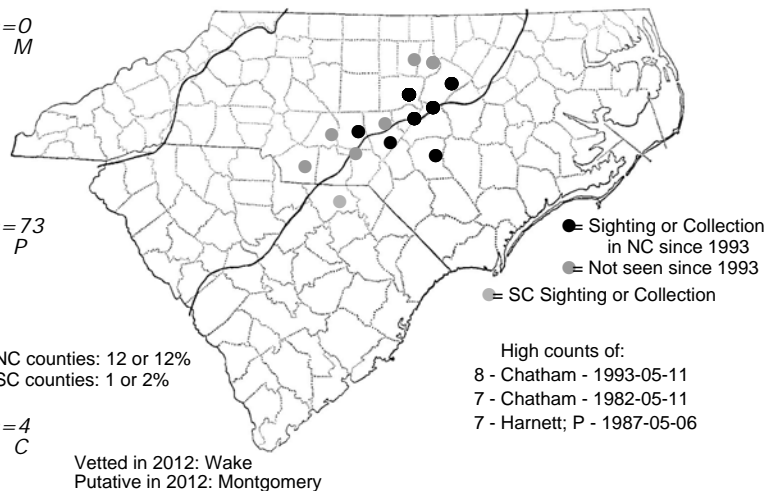
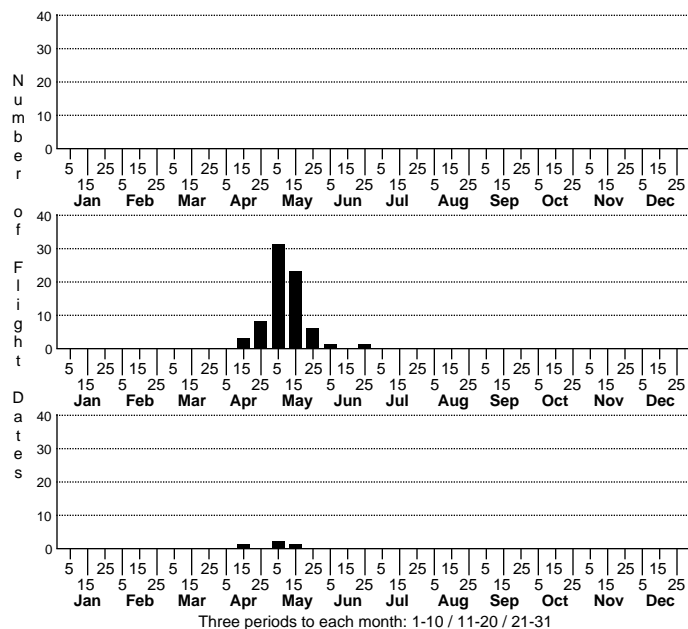
**HABITAT:** Breeds at small and clear, woodland streams, with sand or gravel bottoms.

**BEHAVIOR:** Males perch on vegetation or rocks, seldom on the ground, near streams. They often perch in shady places and can be hard to see.

**COMMENTS:** This species is called "secretive" by Dunkle (2000). This behavior might be the reason NC has records for only 9 counties, despite it presumably being not a scarce species. However, the NC Natural Heritage Program has placed the species on the Watch List, at least until more surveys of montane areas have been done for all odonates.



## *Gomphus septima* Septima's Clubtail



Earliest date: Cumberland 1986-04-12  
Latest date: Wake 2010-06-21

Status		Rank	
NC	US	NC	Global
SR	FSC	S2	G2

**DISTRIBUTION:** A fairly narrow north-south band in the eastern Piedmont and the Sandhills. Ranges west to Orange, Stanly, and Union counties, and east to Harnett and Cumberland counties. The species has a peculiar, disjunct, or relict range, and so far has been found only in NY, NJ, NC, and AL (according to NatureServe Explorer website); however, our website shows a SC record for Chesterfield County.

**ABUNDANCE:** Uncommon but widespread within its rather limited range; apparently increasing. Mainly in the Cape Fear River system -- Haw, Rocky, Deep, and the Cape Fear itself. Rare to very rare in most other river systems.

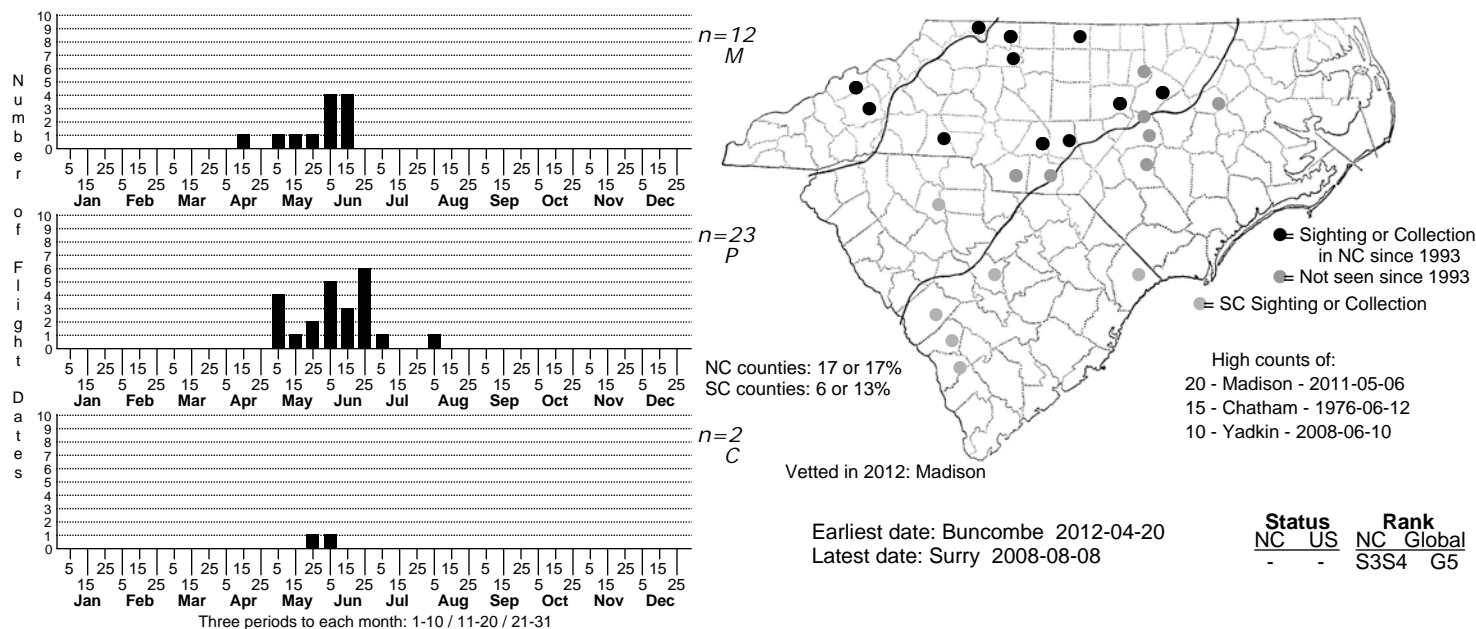
**FLIGHT:** Mid- or late April to the end of May, and sparingly to mid-June. The peak in during the first half of May.

**HABITAT:** Breeds in clean, fast rivers and very large streams.

**BEHAVIOR:** Males perch on the ground near rivers, but they also perch on rocks in the rivers.

**COMMENTS:** Until about 10 years ago, the species was known (apparently) only from NC and AL, and presumed to exist only in NC at that time. It has since been found far to the north in NY and NJ. This is one of the rarest dragonflies in the eastern United States. It has been found in 12 counties in NC and has been seen and photographed on a handful of occasions in the Rocky, Cape Fear, and Deep rivers by staff of State Parks and Natural Heritage Program. These data suggest that it might be increasing in numbers, or slightly expanding its range, over the past few decades.

## *Gomphus vastus* Cobra Clubtail



**DISTRIBUTION:** Widely scattered over the western two-thirds of the state, but primarily in the eastern Piedmont (which might represent an artifact of concentration of field work). Interestingly, nearly all of the mountain and western Piedmont records have come in the past few years, suggesting a possible westward range expansion in the state, though most range maps show the species ranging over the majority of the eastern United States. Likely absent at middle and higher elevations in the mountains.

**ABUNDANCE:** Uncommon in the eastern Piedmont. Rare to very locally uncommon elsewhere in the mountains and Piedmont, and the western part of the Coastal Plain.

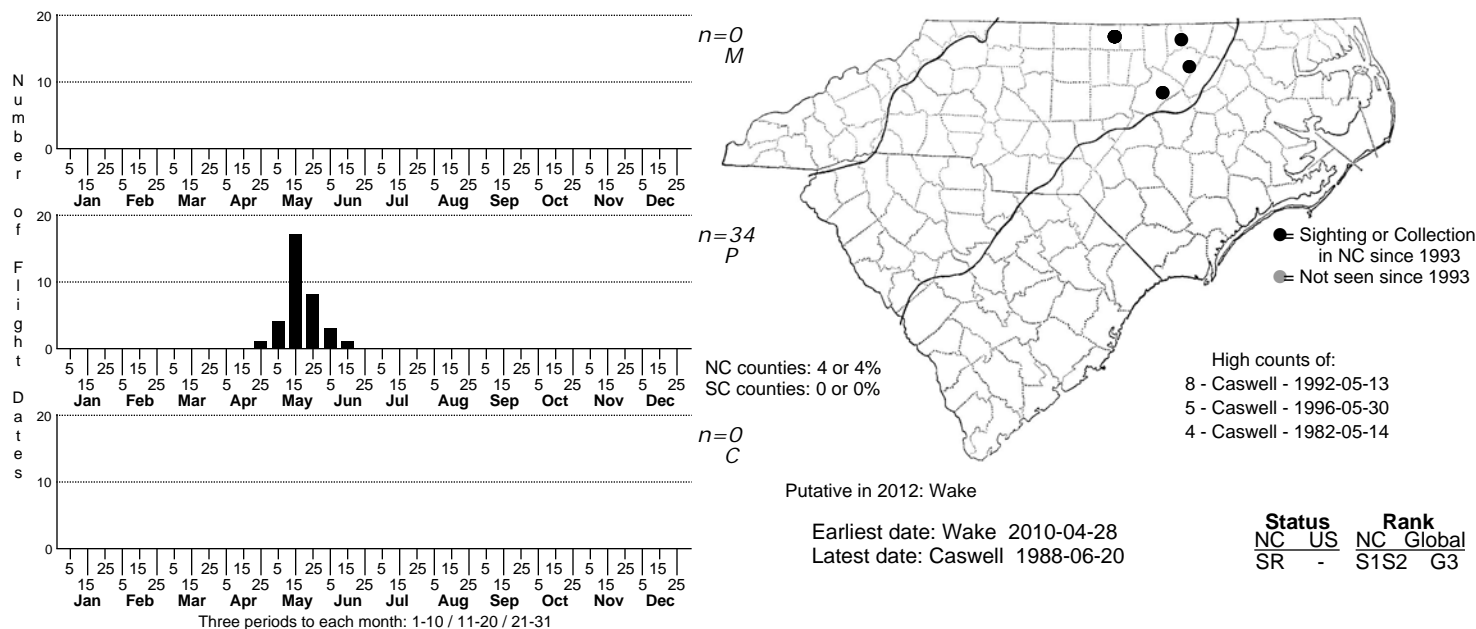
**FLIGHT:** Mostly early May to late June, with an early date of 20 April. A seemingly quite late record on 8 August is open to question, as no other records are after June.

**HABITAT:** Breeds at rivers and large streams, where rocky or with riffles.

**BEHAVIOR:** Males perch along the shore on the ground, or on rocks in the rivers. They may fly well out over the rivers.

**COMMENTS:** This is a very striking species, quite black on the abdomen with very contrasting yellow markings. And, the male's club is very wide -- cobra-like, giving rise to the common name. Even so, there are a few other clubtails (such as Skillet, Splendid, and Blackwater) with wide clubs, and thus sight records must be made with care.

## *Gomphus ventricosus* Skillet Clubtail



**DISTRIBUTION:** A Northern species, ranging south only to the northeastern Piedmont of NC, where it ranges south only to Wake County. Known from just four NC counties.

**ABUNDANCE:** Very rare to rare in NC. Even throughout its overall range, Dunkle (2000) calls it rare, and NatureServe gives it a global rank of G3 (rare). Though there are a minimum of 34 records with dates, many seem to be from the same general area and it should not be inferred that the species is not rare.

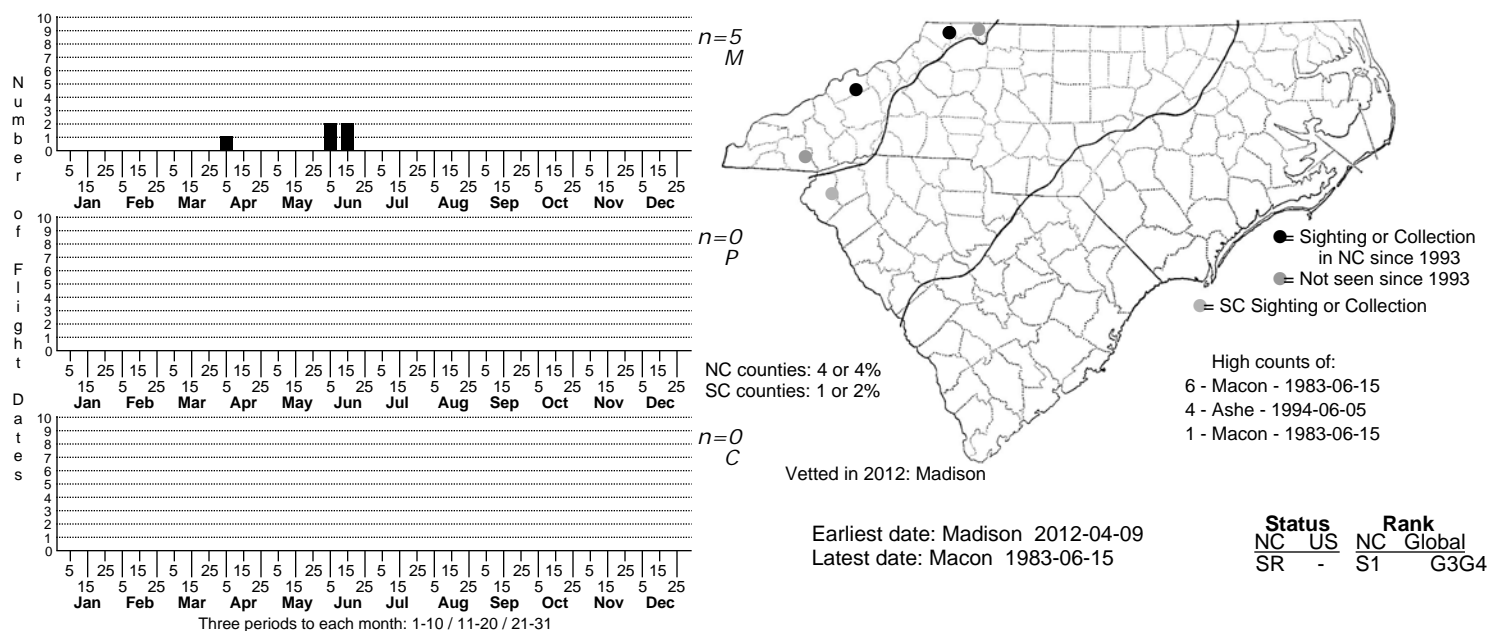
**FLIGHT:** Late April to mid-June; records fall between 28 April and 20 June.

**HABITAT:** Larger rivers and streams that are fast-flowing, though occasionally at lakes with good water quality.

**BEHAVIOR:** Males are most easily seen in short flights out over the water, and they then return to shore to perch, often in grass, in the shade, or other inconspicuous places.

**COMMENTS:** The club is comparatively the widest of any clubtail, it being wider than the thorax width! It is also the smallest clubtail in the Gomphurus group of Gomphus species. Though rare and very poorly known in NC, it probably can be identified in flight within its small state range; the Cobra Clubtail is somewhat similar but that species has a mostly black abdomen (not as yellow on the dorsal portions of the thorax and abdomen as is the Skillet). It is one of the less common of the dragonflies, as NatureServe has its Global Rank at G3.

## *Gomphus viridifrons* Green-faced Clubtail



**DISTRIBUTION:** A Northern species, with the southeastern edge of the range reaching the mountains of the Carolinas, with NC records only for Ashe, Alleghany, Madison, and Macon (and in Oconee in SC).

**ABUNDANCE:** Dunkle (2000) says it is "scarce" within its overall range, and NatureServe gives it a G3G4 (rare to uncommon) global rank. Thus, it is assumed to also be rare in NC.

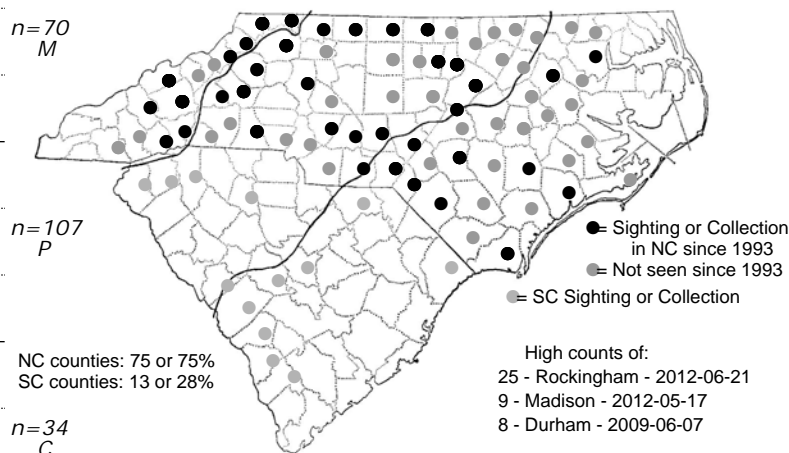
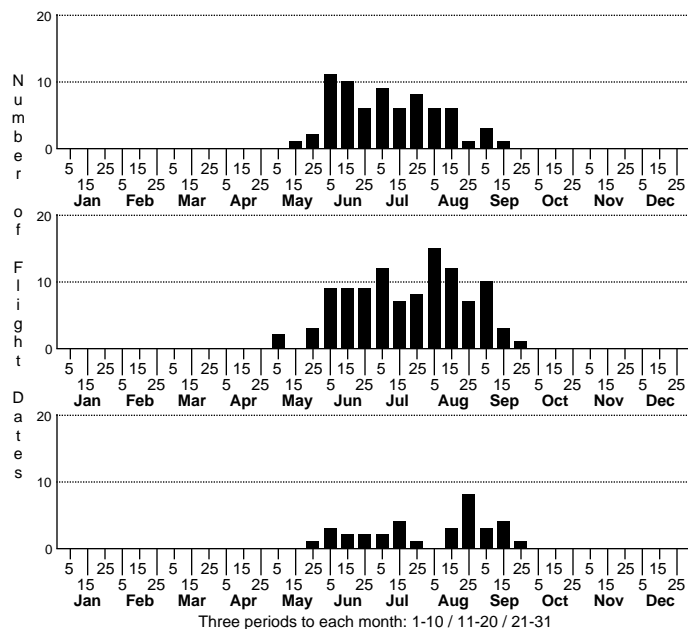
**FLIGHT:** Probably April into June. Dunkle (2000) has a photo from Grayson County, VA, just over the NC line, dated 1 June. Our only records with dates are for 9 April, and then early June to mid-June. Thus, there is a gap in records of nearly two months! However, 2012 was an exceptionally warm and early spring, and thus the 9 April record might be an anomaly. There were several other reports from Madison County in 2012 in the April and May period, but data have not yet been entered.

**HABITAT:** Rocky and fast-moving rivers and large streams. Likes a mixed substrate of silt and gravel.

**BEHAVIOR:** The species is most active late in the afternoon or in cloudy conditions. Males may perch on rocks in the rivers, or on vegetation or the ground near the shore.

**COMMENTS:** This is one of many clubtails that are poorly known in NC, as well as rather rare/scarce throughout the overall range. Thankfully, the large gap in the NC range between Ashe and Macon counties was "filled" by records from Madison County in spring 2012. Jeff Pippen photographed one (shown on his website) from many angles, on 9 April, and this set of photos was reviewed by experts and determined to be this seemingly rare species. This is a difficult-to-identify species, and thus specimens or photos are likely needed to confirm records, at least to document new county records.

## *Hagenius brevistylus* Dragonhunter



Putative in 2012: Avery, Henderson

Earliest date: Rockingham 2012-05-02  
Latest date: Richmond; C 1995-09-28

Status		Rank	
NC	US	NC	Global
-	-	S5	G5

**DISTRIBUTION:** Nearly statewide, though apparently absent from the extreme northeastern part of the state. No records east of Hertford, Martin, and Craven counties. Of spotty distribution in the southwestern mountains, for no obvious reason, as the species occurs over most of the eastern US.

**ABUNDANCE:** Generally fairly common in the mountains and foothills, uncommon to fairly common over most of the Piedmont, but uncommon in the Coastal Plain. Despite its very wide range, found in most NC counties, it is seldom really common and not nearly as often seen as the Lancet and Ashy clubtails (though the Dragonhunter flies later in the season than those two).

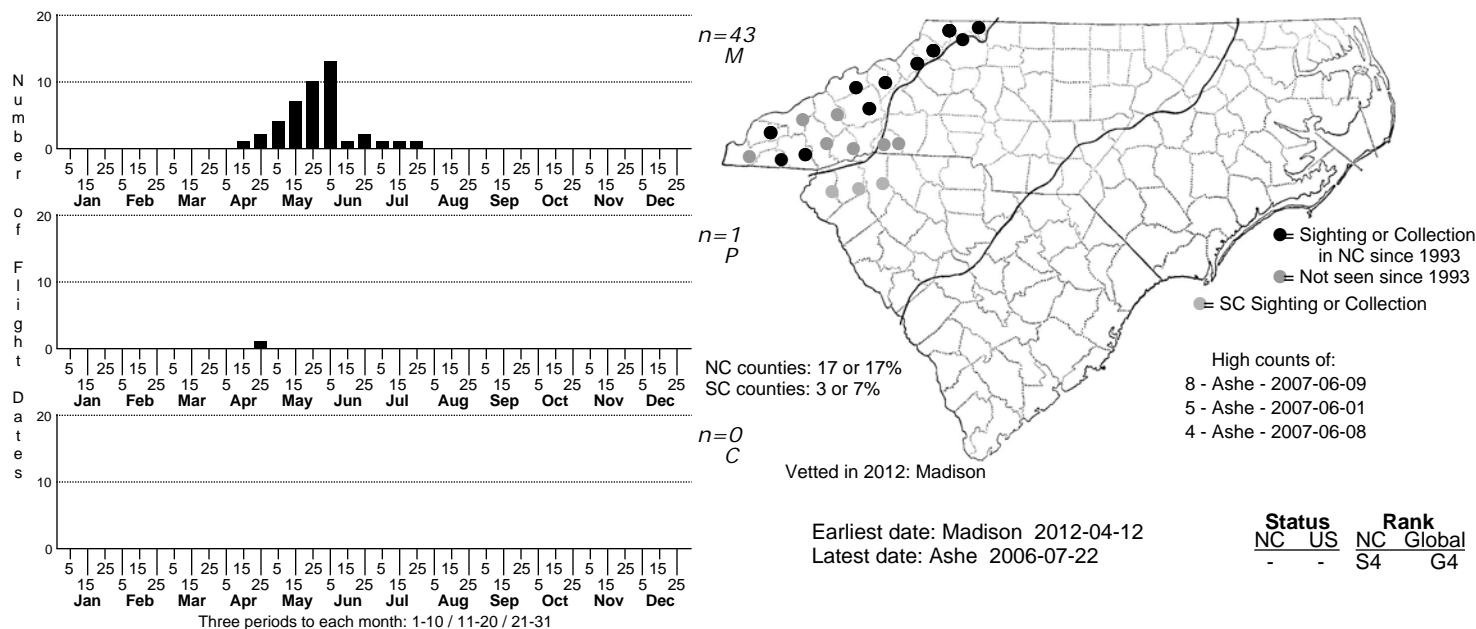
**FLIGHT:** Mainly from mid-May (rarely in early May) to late September; most often seen from mid-June well into August.

**HABITAT:** Generally breeds at swift-flowing streams and rivers, rarely at lakes. Prefers forested waters as opposed to very wide, sunny streams.

**BEHAVIOR:** Males often patrol conspicuously up and down the middle of a river or large stream, easily recognized by its very large size and unusual habit of curling the tip of the abdomen downward into a "J" shape. They also perch on bare ground and vegetation, at times allowing for easy observation.

**COMMENTS:** This is one of the largest of all dragonflies, and the male's habit of flying with the abdomen tip curled in a "J" shape makes it undoubtedly the easiest of the clubtails to identify on the wing. As the common name implies, it is quite predatory on other species of dragonflies, their main quarry. The species is monotypic -- the only species in its genus.

## *Lanthus vernalis* Southern Pygmy Clubtail



**DISTRIBUTION:** Throughout the mountains. Known from all but a few counties in the mountain province. No records downstate. Despite the common name -- Southern (as opposed to the Northern, for *Lanthus parvulus*) -- this is an Appalachian and somewhat Northern species, ranging south only to the extreme northern mountains of GA.

**ABUNDANCE:** Fairly common and widespread. It is one of the more numerous of the clubtails in the NC mountains, even in the southernmost mountain counties.

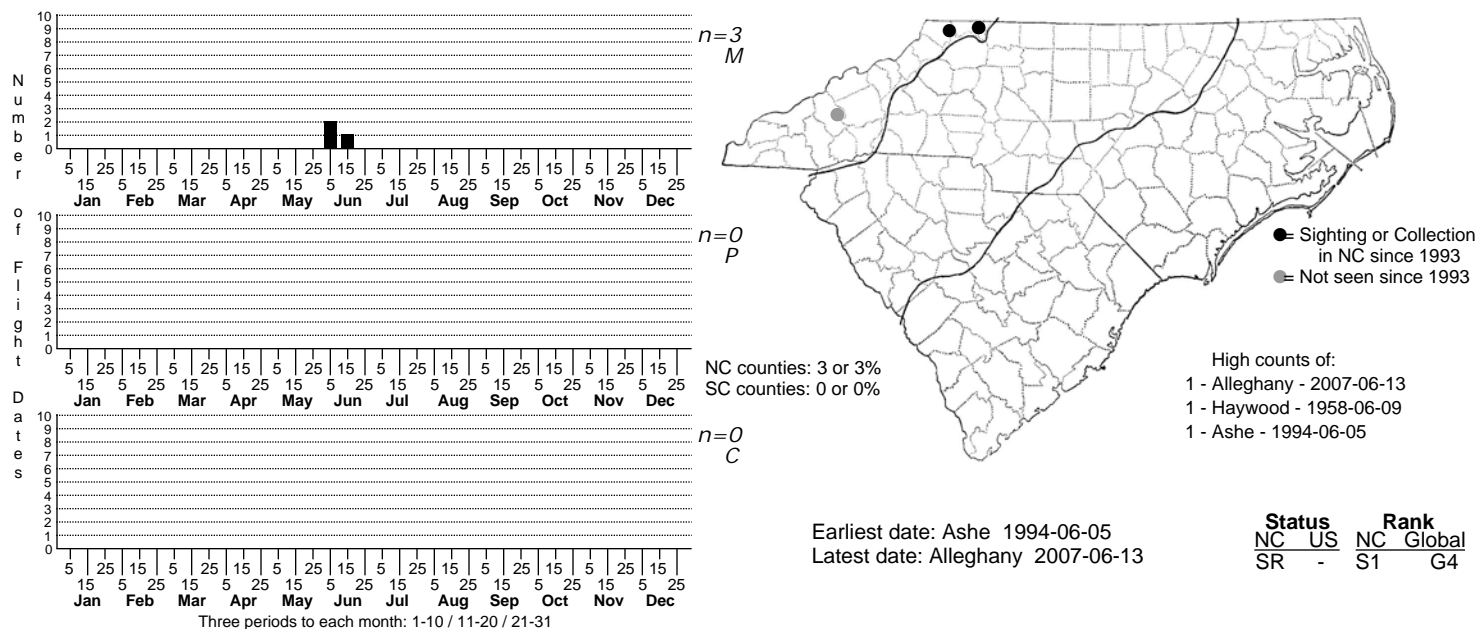
**FLIGHT:** Though both Dunkle (2000) and Beaton (2007) mention or graphically portray the early date as mid-May, many have been seen in NC earlier in the season. Perhaps global warming is moving the flight in NC earlier, but its flight in the state is now from mid-April to mid- or late July. The peak occurs from mid-May to early June.

**HABITAT:** Typically breeds at small, rocky streams, often where shaded.

**BEHAVIOR:** Usually seen perched on vegetation, often well away from streams, but in wooded areas, such as along wide trails and dirt roads. Rather unwary and easily studied.

**COMMENTS:** By mid-May, this can be a somewhat easily found dragonfly near streams and along dirt roads through bottomlands or along streams. It is one of the smaller clubtails, and it is somewhat slender as well. Interestingly, Dunkle (2000) calls the species "uncommon" across its range, and Beaton (2007) calls it "rare to locally uncommon" in its small northern Georgia range. Perhaps it is more common in NC than elsewhere within its range.

## *Ophiogomphus aspersus* Brook Snaketail



**DISTRIBUTION:** This is a Northern species, apparently with a disjunct population in the southern Appalachians. In NC, it is found primarily in the northern mountains (next to the VA state line), with an outlier record from Haywood County.

**ABUNDANCE:** Rare in the vicinity of the New River in Ashe and Alleghany counties, and certainly very rare to absent farther southward in the mountains. This is especially true in that all known daily counts are of just a single individual.

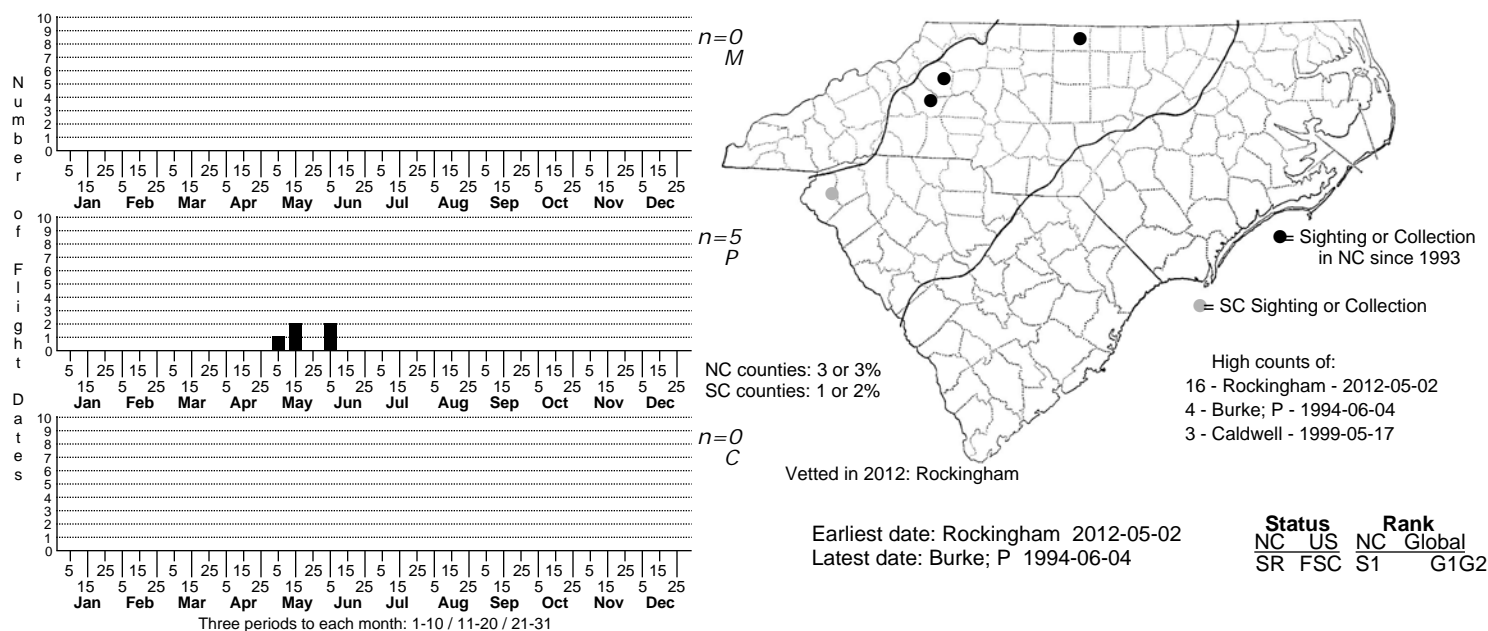
**FLIGHT:** Probably the latter part of May into most of June. The only NC dates available are for a very narrow period of 5-13 June, though of course the flight period must surely be a month or more.

**HABITAT:** Not surprisingly, it breeds in clear, rocky rivers or streams, but Dunkle (2000) says these waters are "in the open", with brushy margins.

**BEHAVIOR:** Adults forage both near water and in fields and woodland roads/trail. Males perch on rocks in the rivers/creeks and elsewhere.

**COMMENTS:** This is another of the many clubtails that is very poorly known in the state, in part because the southern edge of the range apparently includes only a relatively few counties (in the mountains). Ted Wilcox's record came from the New River, as did a collection record from Duncan Cuyler. (Thus, the habitat as written in most guides is not strictly "brooks" or "streams", but it can be larger rivers such as the New.) Biologists looking for clubtails in the mountains always should check first alongside the largest and rockiest rivers available -- in the case of Ashe and Alleghany counties, it is the New River.

## *Ophiogomphus edmundo* Edmund's Snaketail



**DISTRIBUTION:** According to Beaton (2007), this species has been found in just 6 counties in its range, in NC, TN, and GA. The range map in Paulson (2011) also confirms this narrow range from northern GA northeast to western NC. The NC range is the escarpment/foothills, in Caldwell and Burke counties; however, a new record (2012) from Rockingham, well into the Piedmont, has extended the range considerably to the northeast, almost to the VA border. It ought to be present in other foothill counties, especially south of Burke County.

**ABUNDANCE:** Very rare throughout its range, as well as in NC. However, at the very few locations where found, there have been small numbers seen in a given day, as opposed to just a single individual.

**FLIGHT:** The flight in NC, based on 5 records, is from early May to early June, if not slightly longer. The Georgia records fall between 24 April and 25 May (Giff Beaton's website).

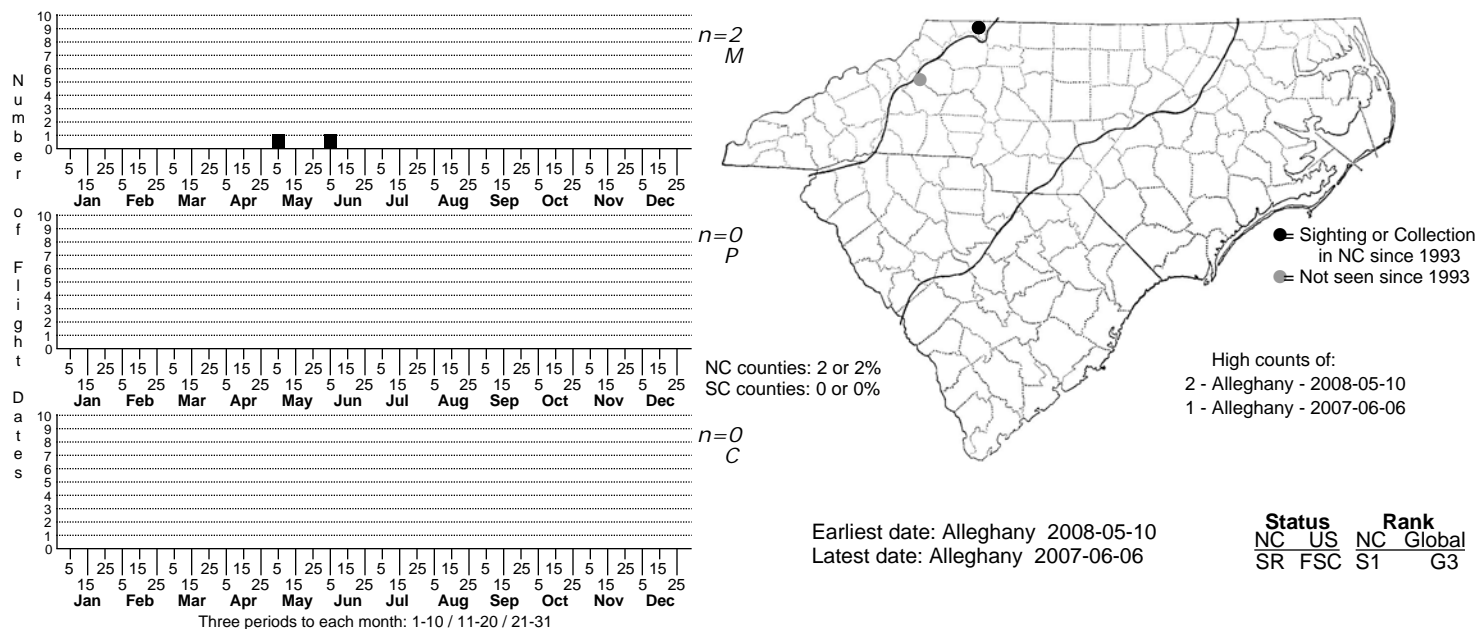
**HABITAT:** Rivers and larger creeks with fast-flowing, clear water.

**BEHAVIOR:** Males are seldom seen except when perching on rocks in the rivers and streams. Dunkle (2000) says that the adults, at least males, spend most of their time high in trees.

**COMMENTS:** This species was considered to be of historical global occurrence (GH) until re-discovered in 1994 in the NC foothills. It has been searched for in the state in the Burke/Caldwell vicinity a few times since the discovery, without success. However, Ed Corey made a remarkable discovery in Rockingham County in 2012, observing 16 individuals, photographing and collecting one to document this remarkable discovery and major range extension into the middle Piedmont. With a global rank of G1G2, this may be globally the rarest dragonfly that occurs in NC. In fact, it ought to have been Federally listed as Endangered or Threatened already.



## *Ophiogomphus howei* Pygmy Snaketail



**DISTRIBUTION:** This is a Northern/Appalachian species that ranges south to the mountains of NC. Within the state, it is known from only two mountain counties -- Alleghany and Burke.

**ABUNDANCE:** Undoubtedly very rare. Dunkle (2000) also considers the species to be "scarce" throughout its range.

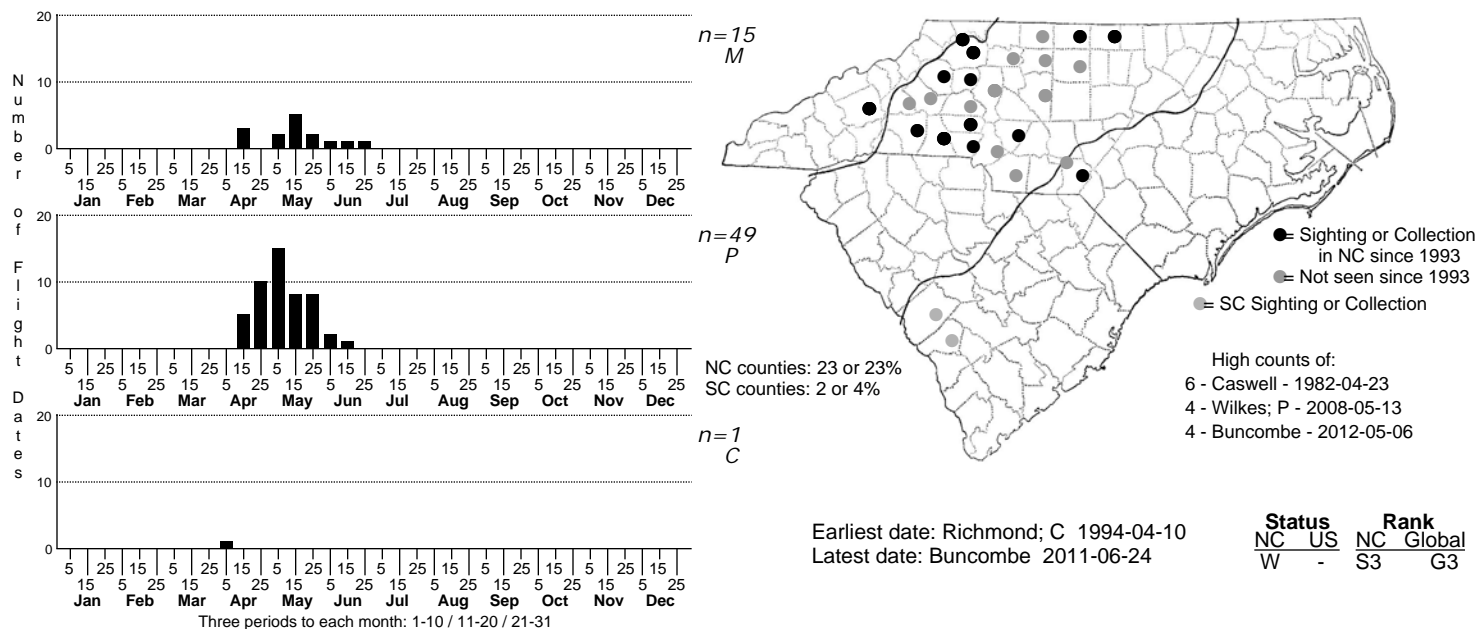
**FLIGHT:** The only NC dates available to us are 10 May and 6 June, both from Alleghany County. The date(s) for the Burke County record is not known. Thus, the flight is presumed to occur from early May to early to mid-June.

**HABITAT:** Breeds at large, clear rivers, with sand or gravel bottoms.

**BEHAVIOR:** Males fly in a bouncy manner low over ripples in the rivers, where they are difficult to observe.

**COMMENTS:** This is the smallest snaketail and one of the smallest of the clubtails, typically well under 1.5" in length. As with so many other clubtails, especially those restricted in NC to the mountains, it is practically unknown to most biologists. The New River in Ashe and Alleghany counties is the best spot to look for this and many other rare or poorly known dragonflies in our mountains. Perhaps surprisingly, it has not yet been found in Ashe County, though the Alleghany records are for the New River, which flows through much of the former county.

## *Ophiogomphus incurvatus* Appalachian Snaketail



**DISTRIBUTION:** Throughout the western and central Piedmont, but apparently absent from the northeastern Piedmont. Recorded east to Caswell, Guilford, Davidson, and Richmond counties (presumably in the Piedmont portion of the county). Surprisingly, it has been recorded from only a single "completely" mountain county (Buncombe), though there are many records for mountain foothill counties that are technically in the Piedmont (i.e., Wilkes, Caldwell, Burke, McDowell, and Rutherford). The species has a rather limited range from Maryland to Alabama, and even though the common name is "Appalachian", and the general range is the southern Appalachians and Piedmont, for some interesting reason (elevation?) there are barely any "true" mountain records for NC.

**ABUNDANCE:** Uncommon to locally fairly common. It is quite widespread for a clubtail in the state, as there are records for most counties in the western 2/3rds of the NC Piedmont. However, this is globally a scarce species, as NatureServe has a G3 (rare) global rank. Thus, NC might have the highest density of the species.

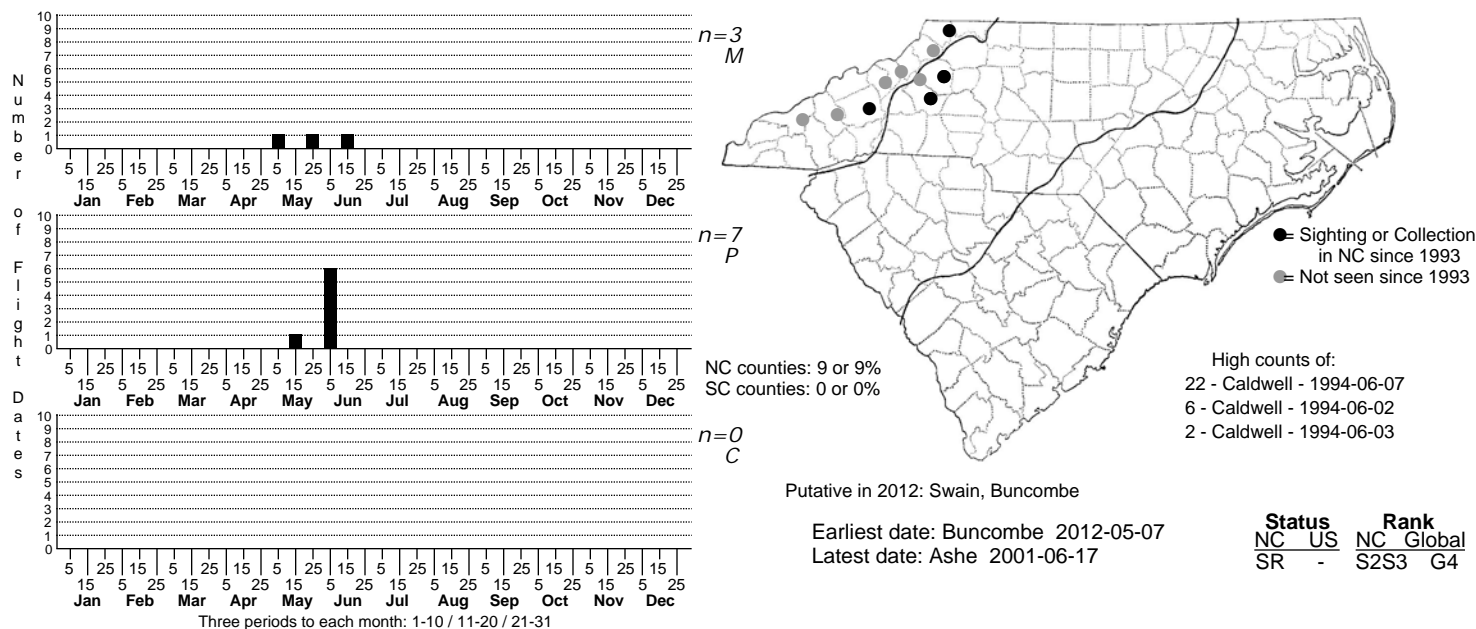
**FLIGHT:** Mid-April to late June, both in the mountains/foothills and in the remainder of the Piedmont. The single record for Richmond County is for early April, and thus in the southern Piedmont counties, the flight may start by early April.

**HABITAT:** Small to medium streams, often in the open, for breeding; usually the streams are clear with some riffles and some gravel.

**BEHAVIOR:** Males typically perch on twigs or low vegetation near a creek; they make short patrols over the water.

**COMMENTS:** Though this is a globally scarce species, with Paulson (2011) calling it "rare" and Dunkle (2000) calling it "uncommon", it apparently is most numerous in its range in the western and central NC Piedmont. Snaketails (clubtails in the genus *Ophiogomphus*) are typically a bit more colorful than clubtails in other genera, especially with the bright lime-green or grass-green sides of the thorax. Because of its G3 global rank, though it is not a rare species in NC, the NC Natural Heritage Program has added the species to its Watch List in 2012; this is especially needed because there are relatively few recent reports.

## *Ophiogomphus mainensis*    Maine Snaketail



**DISTRIBUTION:** Essentially the mountains only, including Atlantic drainage streams along the upper Piedmont/Blue Ridge Escarpment; probably ranges throughout the mountain province, as this is a Northern species but yet ranging south to northern GA (two counties).

**ABUNDANCE:** Rare to locally uncommon. Apparently not as rare as several other mountain/foothills-only clubtails, as NC has records for 9 counties.

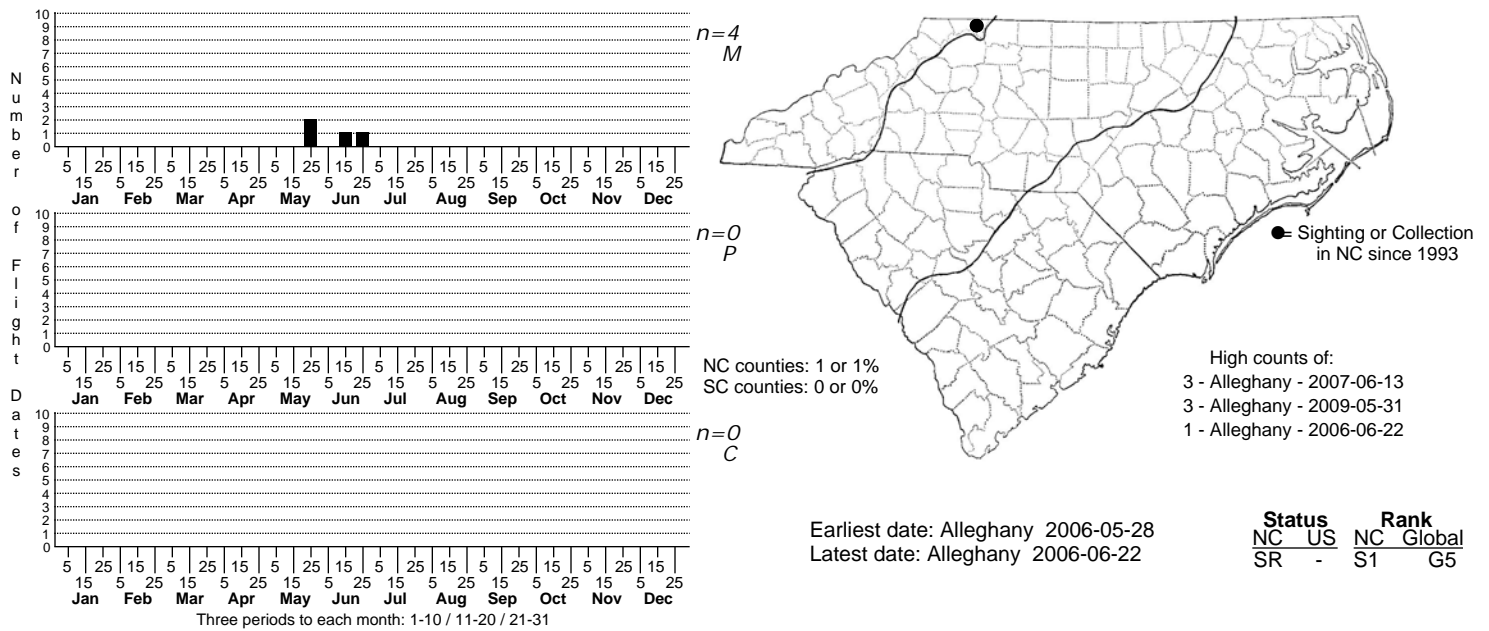
**FLIGHT:** Early or mid-May to mid-June. GA has records from 17 May and June (undated).

**HABITAT:** Clear and rapid mountains streams or small rivers, in forested areas, for breeding.

**BEHAVIOR:** Males perch on rocks in the streams, but adults tend to feed in fields, according to Dunkle (2000).

**COMMENTS:** This species has a fairly extensive range in terms of latitude, from New Brunswick to northern Georgia, but it ranges west only through the Appalachians. As Dunkle (2000) calls it "fairly common", and Beaton (2007) cites three records from northern Georgia, we suspect that it is not rare in NC, but probably uncommon, likely being present in most counties in the mountains with further study. However, until more records are available, the NC Natural Heritage Program lists the species as Significantly Rare.

# *Ophiogomphus rupinsulensis* Rusty Snaketail



**DISTRIBUTION:** Northern, ranging south to extreme northwestern NC and TN. Known in NC only from Alleghany County, where first reported (photos) in 2006.

**ABUNDANCE:** Certainly must be very rare in NC. Within its fairly broad/wide range, however, Dunkle (2000) calls it "fairly common".

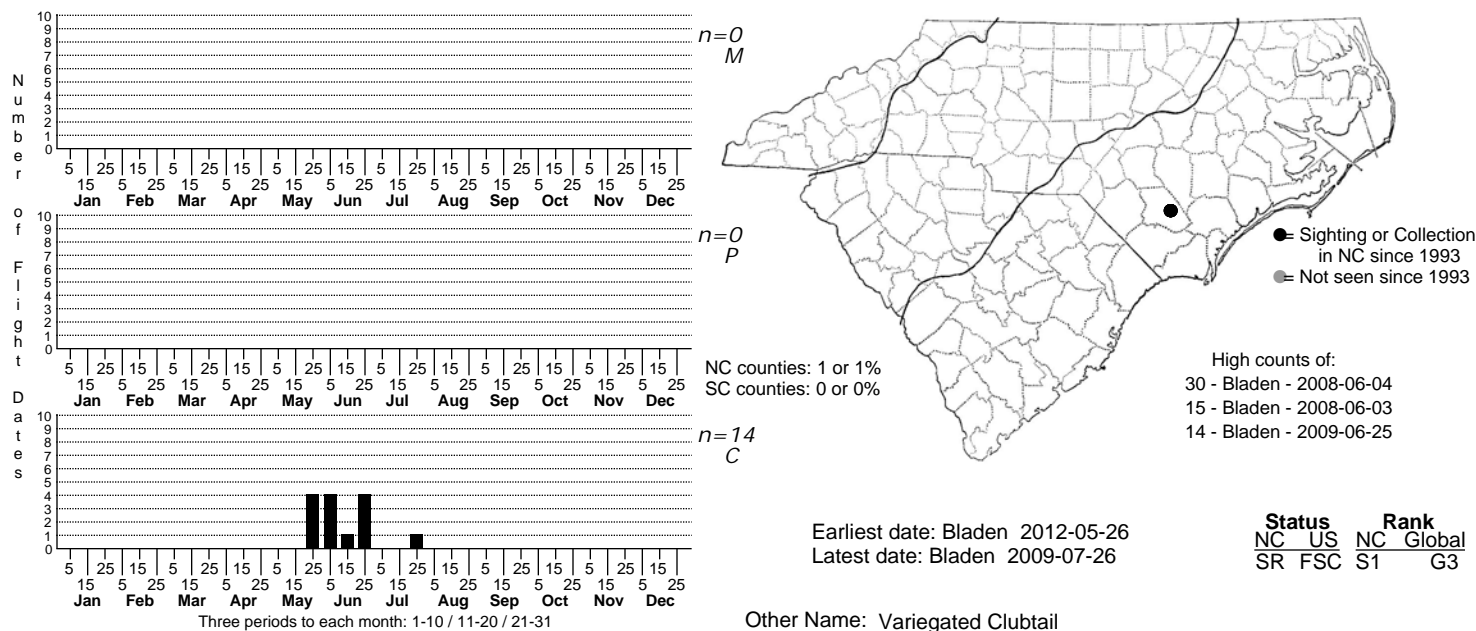
**FLIGHT:** The NC records fall between 28 May and 22 June. However, Mead (2003) gives a wide range from mid-May to mid-August for the MN area, and Dunkle (2000) gives "Early May to late Sep."; this is a remarkably wide spread of flight dates for any clubtail!

**HABITAT:** Large streams and rivers, where water is clear, with rapids and riffles.

**BEHAVIOR:** Adults, where present, are rather easily seen, as they often perch on dirt or other ground or low vegetation. As with most clubtails, males often perch on rocks in the rivers while guarding territories.

**COMMENTS:** This species had been reported to occur in NC in one or more references prior to 2006, though we were aware of no documentation, and Duncan Cuyler had no specimen data for the species in NC. Fortunately, while photographing dragonflies at the Alleghany County section of New River State Park on 28 May and again on 22 June, 2006, Ted Wilcox documented this species along the margins of the New River with excellent photographs.

## *Progomphus bellei* Belle's Sanddragon



**DISTRIBUTION:** Only known in NC from large, natural Carolina bay lakes in Bladen County. Known from Baytree, Jones, Salters, Singletary, and White lakes. This area is highly disjunct from the main part of the range in the FL panhandle.

**ABUNDANCE:** Not uncommon at several lakes during at least a portion of the flight period; however, absent to extremely rare away from such lakes.

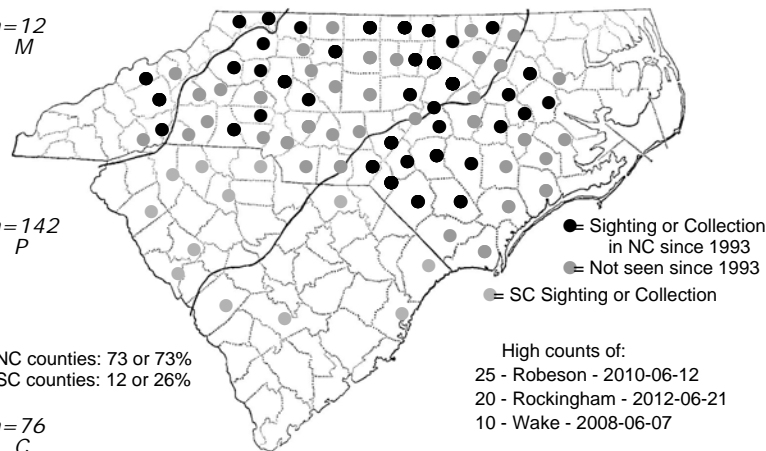
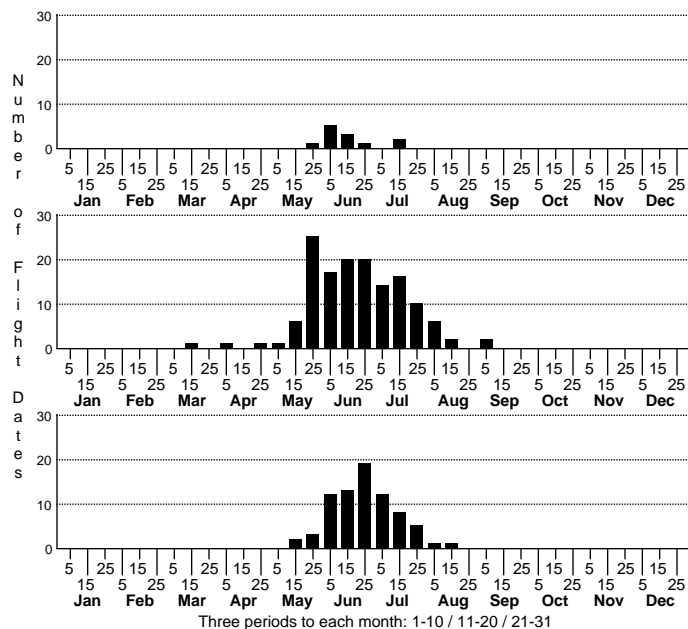
**FLIGHT:** The flight occurs from late May to late July, with the peak in early to mid-June. Dunkle (2000) gives a flight range from "Early May to mid-Aug.", though that likely applies to the FL population.

**HABITAT:** In NC, only at large Carolina bay lakes, with a sandy bottom and shoreline.

**BEHAVIOR:** Males perch on sand along the lake shorelines, but they also perch on adjacent twigs and cypress knees along the shoreline. (Sanddragons [genus *Progomphus*] are named by the habit of males for perching on damp sand.) Males make patrolling flights about a foot above the surface of the lakes, coming back to the shore to perch from time to time. They are quite wary, difficult for a person to approach within 10 feet.

**COMMENTS:** This is clearly one of the rarer dragonflies in the southeastern part of the country, with a global rank of G3. Of note is that the species is not known at all from intervening SC or GA. One must wonder if Belle's Sanddragon might occur at other similar large, sand-bottomed Carolina bay lakes in NC, such as Lake Waccamaw. Photos and specimens from NC have much smaller (or lack) yellow spots on the side of the abdominal club and probably warrant description as a new subspecies (though presumably not as a new species). Ed Corey found the species to be quite numerous on several dates in June 2008 at four of the State Lakes in Bladen County (photos and specimens for documentation). However, he and other State Park personnel were unable to find the species at Lake Waccamaw in Columbus County in 2008.

## *Progomphus obscurus* Common Sanddragon



NC counties: 73 or 73%  
SC counties: 12 or 26%

High counts of:  
25 - Robeson - 2010-06-12  
20 - Rockingham - 2012-06-21  
10 - Wake - 2008-06-07

Putative in 2012: Surry

Earliest date: Surry 2012-03-16  
Latest date: Wake 2007-09-09

Status		Rank	
NC	US	NC	Global
-	-	S5	G5

**DISTRIBUTION:** Nearly statewide, but apparently absent from the extreme northeastern and eastern counties, and of spotty occurrence in the mountains (and perhaps absent in the middle and upper elevations). No records east of Halifax, Martin, and Craven counties in the Coastal Plain; and known from just seven counties in the mountains.

**ABUNDANCE:** Fairly common to common in most of the state, though less numerous than Lancet and Ashy clubtails. This species and the Black-shouldered Spinyleg are the most frequently seen clubtails across the state during the late spring and early summer months. Rare in much of the mountains, and presumably scarce to absent over 3000-feet elevation.

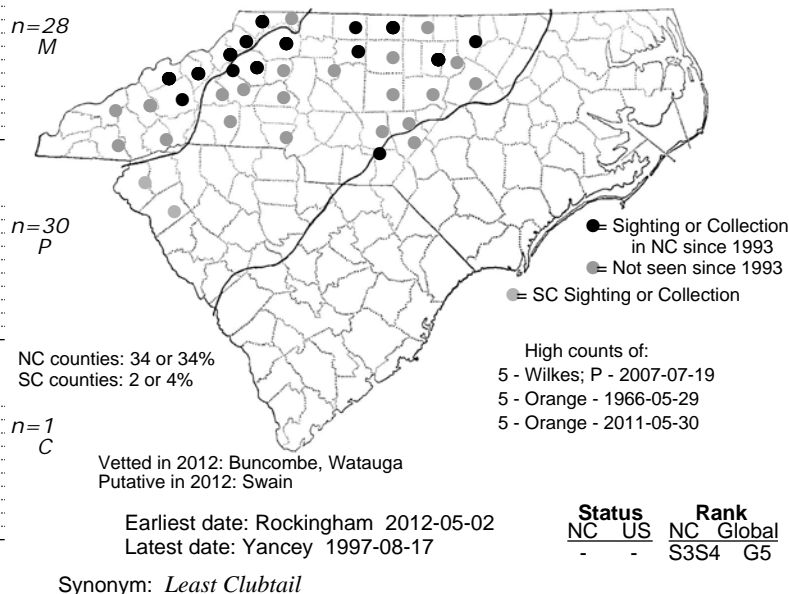
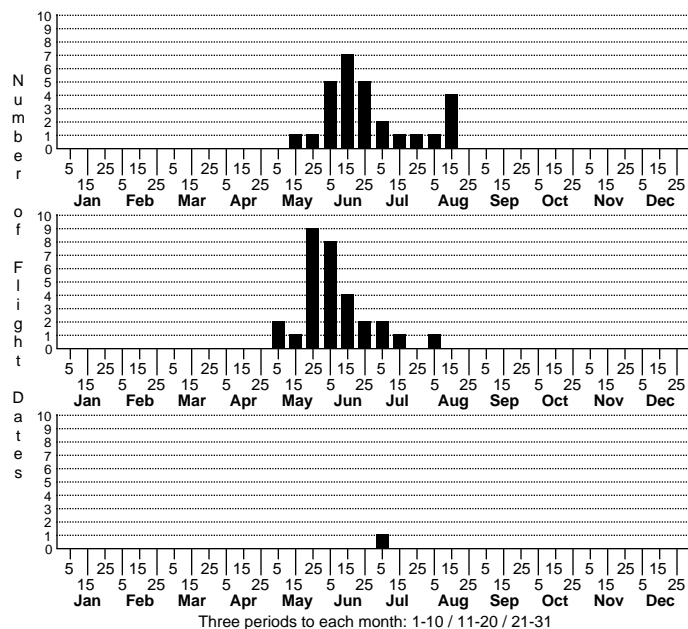
**FLIGHT:** Generally from mid-May to mid-August. However, there are scattered records as early as 16 March and as late as 9 September. The flight starts slightly later in the mountains than downstate.

**HABITAT:** Creeks or small rivers with sandy shores, sand bars, and other sandy areas nearby. These are often in rather open habitats, but may be in wooded areas.

**BEHAVIOR:** As the common name implies, this species is most often seen perching on damp sand or sandbars close to water. In hot weather, the males obelisk with the abdomen held angled up from the surface of the sand. They also perch on twigs near water and fly short distance over water.

**COMMENTS:** A dragonfly perching -- with the abdomen raised -- on sand next to a small stream will more than likely be a Common Sanddragon. Though seldom seen in large numbers in NC on a given day, it is quite widespread, with records from practically all Piedmont and Coastal Plain counties (except in the far east). The shape of the yellow markings on the dorsal side of the abdominal segments is quite unusual, almost like an inverted bell, with the wide, open end of the bell at the anterior portion of each segment.

# *Stylogomphus albistylus* Eastern Least Clubtail



**DISTRIBUTION:** Mountains and Piedmont only. Scattered across both provinces, eastward to Granville, Wake, and Moore counties.

**ABUNDANCE:** Uncommon and easily overlooked, despite a fairly extensive range in the state (present over the western 60% of the state). Despite the large number of records, the peak one-day count is just of 5 individuals.

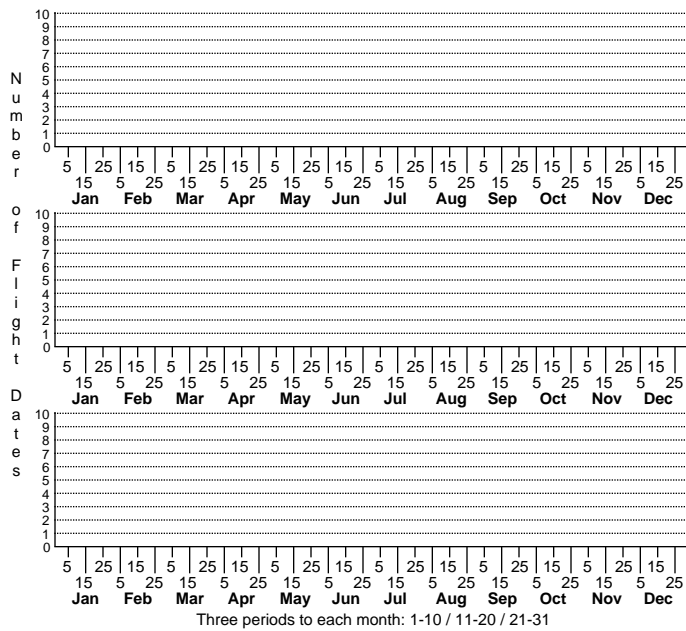
**FLIGHT:** Early May to early August in the Piedmont, and from mid-May to mid-August in the mountains.

**HABITAT:** Small, clear, woodland creeks are preferred; sandy or gravel bottoms.

**BEHAVIOR:** Males often perch on rocks in the streams, where they are difficult to spot because of their small size and dark coloration. They also perch on vegetation near the water and make small, quick flights over water.

**COMMENTS:** This species might be more overlooked and hard to spot rather than being truly "scarce". Despite its range, including the Triangle and eastern Piedmont where most biologists study odonates, there are essentially no reports from State Park personnel. This is not a species one would casually stumble into while in the field; rather, one should look carefully along small shaded or semi-shaded creeks in June or the first half of July.

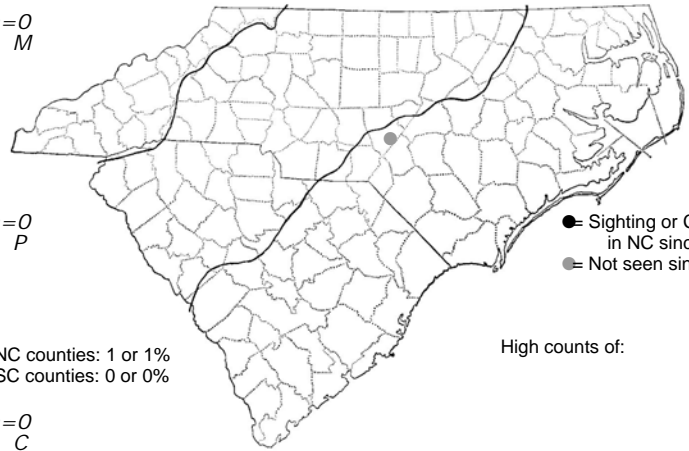
# *Stylogomphus sigmastylus* Interior Least Clubtail



$n=0$   
M

$n=0$   
P

$n=0$   
C



● Sighting or Collection in NC since 1993  
● Not seen since 1993

NC counties: 1 or 1%  
SC counties: 0 or 0%

High counts of:

Putative in 2012: Moore; C

Earliest date: ?  
Latest date: ?

Status		Rank	
NC	US	NC	Global
W	-	SU	G5

**DISTRIBUTION:** This is a species of the Ozark Mountains eastward to central TN. There are records reported in Paulson (2011) from southwestern VA and central NC. According to the Odonata Central database, this NC record (specimen?) is from Moore County.

**ABUNDANCE:** Presumably extremely rare in NC, assuming a correct identification.

**FLIGHT:** Probably May into October.

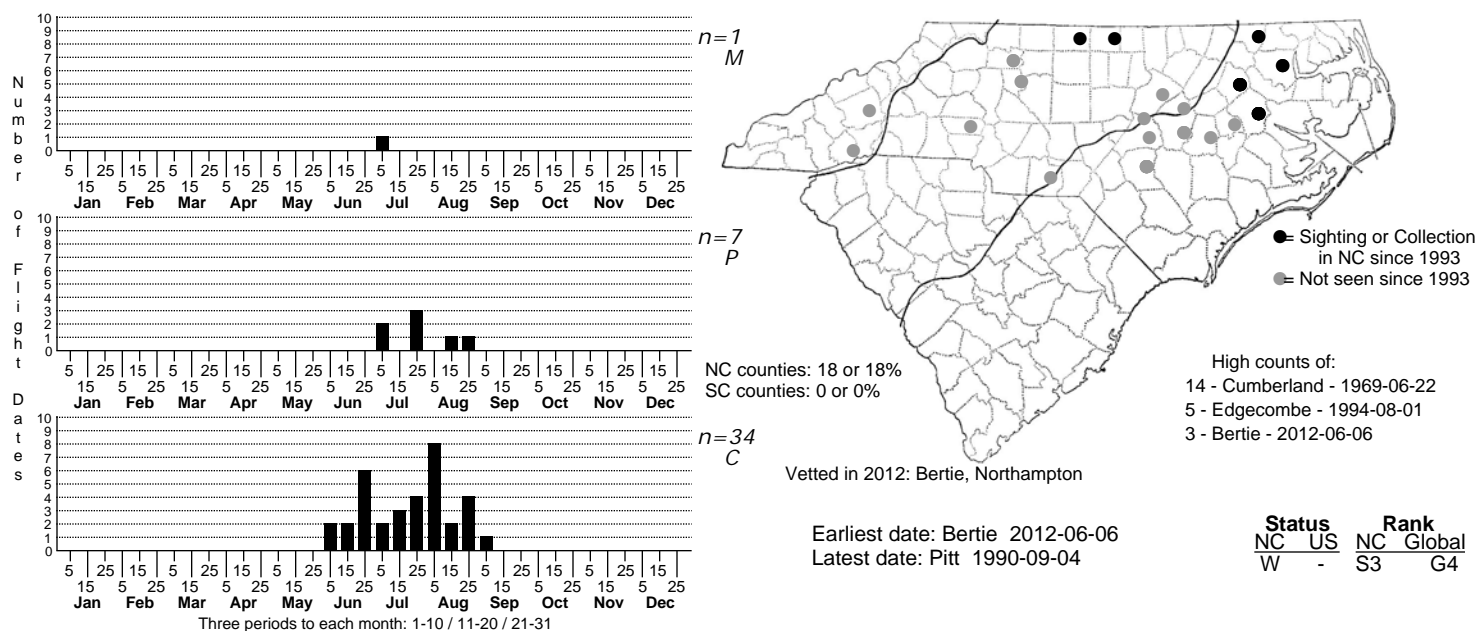
**HABITAT:** Rivers that are clear and somewhat small, with moderate current. Apparently the same as for Eastern Least Clubtail.

**BEHAVIOR:** Presumably like that of Eastern Least Clubtail.

**COMMENTS:** This species looks very similar to the Eastern Least Clubtail, which is uncommon in itself in the state. Thus, it seems that a specimen would be necessary to confirm the Interior Least Clubtail in NC. We hope to have more details on this remarkable record (if correct).



## *Stylurus amnicola* Riverine Clubtail



**DISTRIBUTION:** Widely scattered in the lower mountains, Piedmont, and western half of the Coastal Plain. Absent from the eastern part of the Coastal Plain, and there are just two county records for the mountains.

**ABUNDANCE:** Rare to locally uncommon in the Coastal Plain portion of the range, very rare to rare in the Piedmont, and very rare in the mountains.

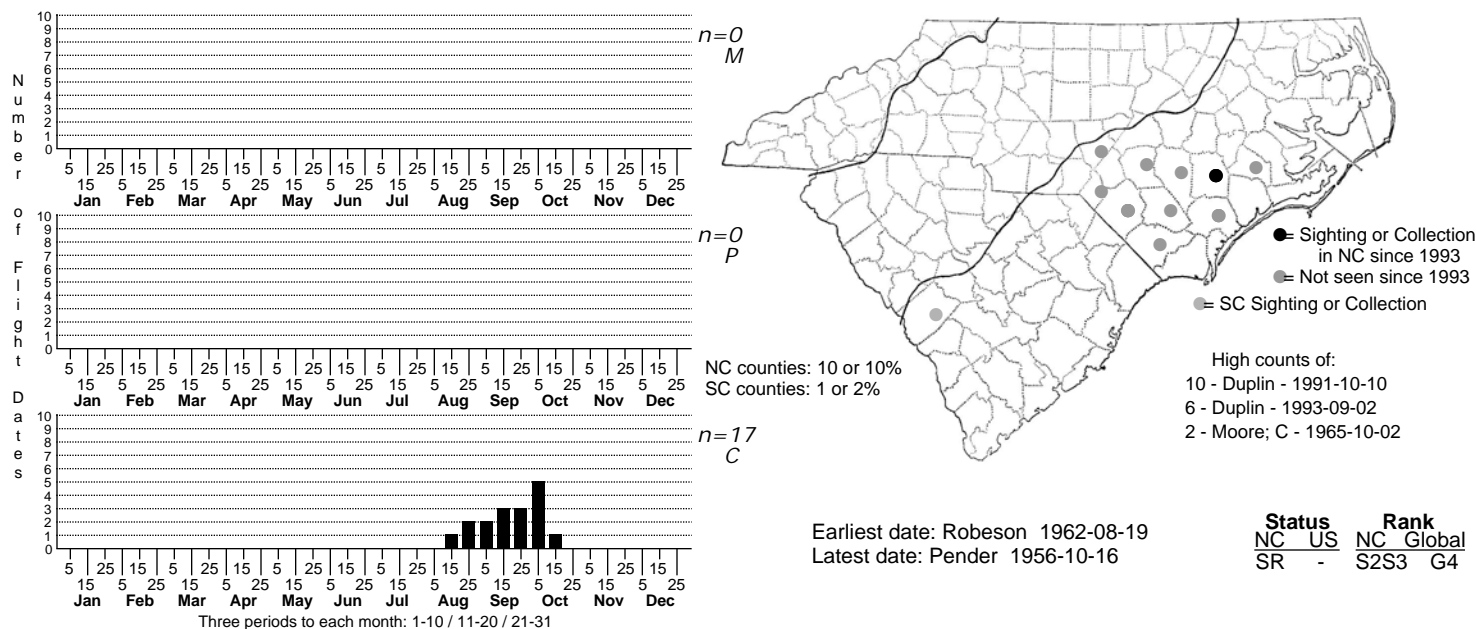
**FLIGHT:** In the Coastal Plain, early June to early September. Upstate, records fall between early July and late August, though it might be expected in June in the Piedmont.

**HABITAT:** Rivers with a rapid current and various substrates, for breeding.

**BEHAVIOR:** Perches on leaves or other vegetation close to the streams and rivers. Males, at least, are rather unwary (compared to other *Stylurus* species).

**COMMENTS:** Though there are records from about 65-70% of the geographic area of NC, there are only 18 county records, implying a scarce species that is poorly known. Steve Hall and Harry LeGrand found the species on several occasions in summer 2012 along the Roanoke River, where photos from Bertie and Northampton counties established new county records and thus first records for the Roanoke River floodplain. The species may be in decline, as these were the first records in recent years. However, the species could be overlooked as a Black-shouldered Spinyleg unless carefully photographed or observed.

## *Stylurus ivae* Shining Clubtail



**DISTRIBUTION:** Strictly the southeastern portion of the state -- the southern 35-40% of the Coastal Plain in particular. It ranges north to Moore, Sampson, and Jones counties. These counties represent the northeastern end of the range of this Southeastern species.

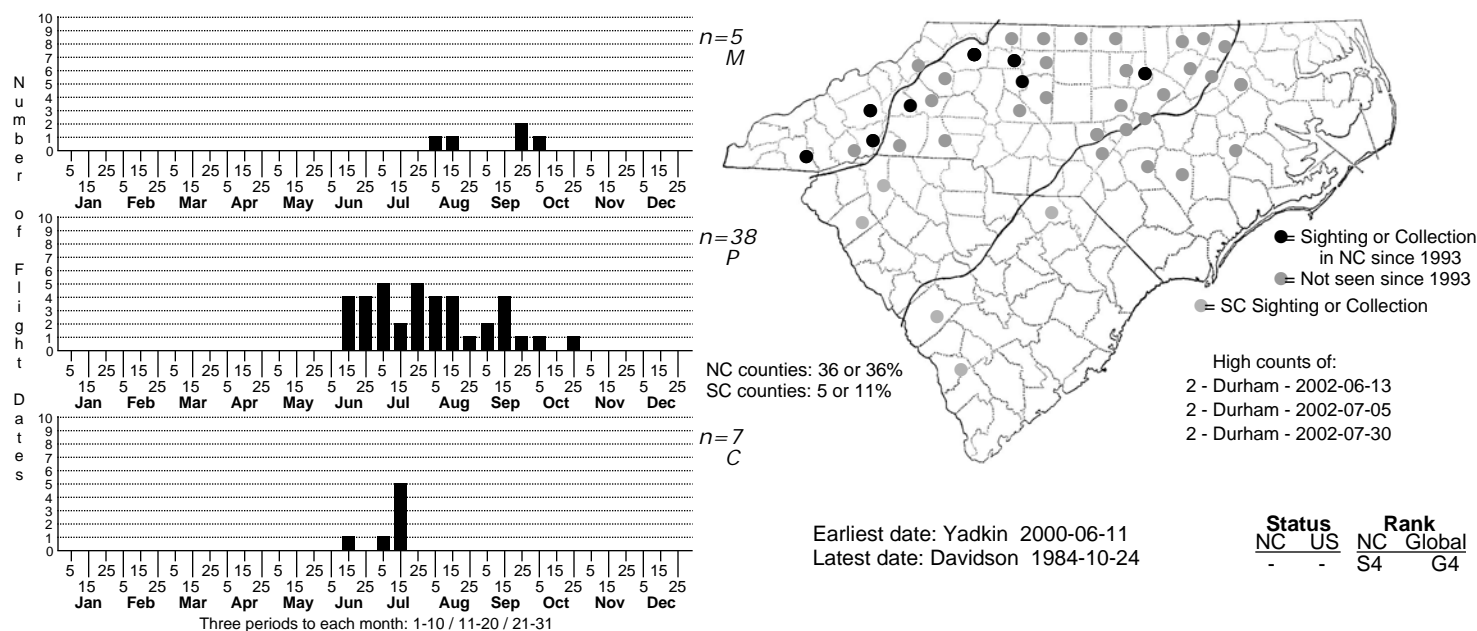
**ABUNDANCE:** Uncommon, prior to about 1995; however, there are no more recent records, and thus the species may have declined considerably, as it should not be difficult to identify. Possibly rare at the present time, but as this species flies mainly in the fall and in areas where few biologists live, the species might simply be under-surveyed.

**FLIGHT:** One of the very few "autumn-only" dragonflies in NC, though technically it begins its flight in August. The flight in the state occurs between mid-August and mid-October, peaking in late September and early October.

**HABITAT:** Sandy creeks or small rivers, where waters are clean.

**BEHAVIOR:** Males typically forage in fields or clearings, perching conspicuously. They patrol over streams in a slow manner, often with some hovering.

**COMMENTS:** This is a dragonfly that likely can be identified in flight over water, owing to the glowing bright yellow or golden-yellow club, and the fairly late flight period. The more numerous Russet-tipped Clubtail has a more orange/red club. The relatively poor experience of biologists with this species is more likely due to the infrequency of field work around smaller creeks in the southeastern part of the state than to any real "scarcity". Because few biologists are looking for dragonflies in the southern Coastal Plain in the autumn, it is too soon to suggest a decline in numbers of this species. Nonetheless, the absence of any records since the early 1990s, for a readily identified species, is alarming; thus, the NC Natural Heritage Program has moved the species from its Watch List to its Rare List.



**DISTRIBUTION:** Throughout the Piedmont, the upper Coastal Plain, and sparingly in the low mountains. Ranges east only to Halifax, Edgecombe, and Lenoir counties. Only 5 county records for the mountain province.

**ABUNDANCE:** Uncommon in the Piedmont, but rare in the mountains and Coastal Plain portions of the range. One of the more widespread of the stream clubtails in the state, though still far from a commonly seen species, especially considering a daily peak count of just 2 individuals.

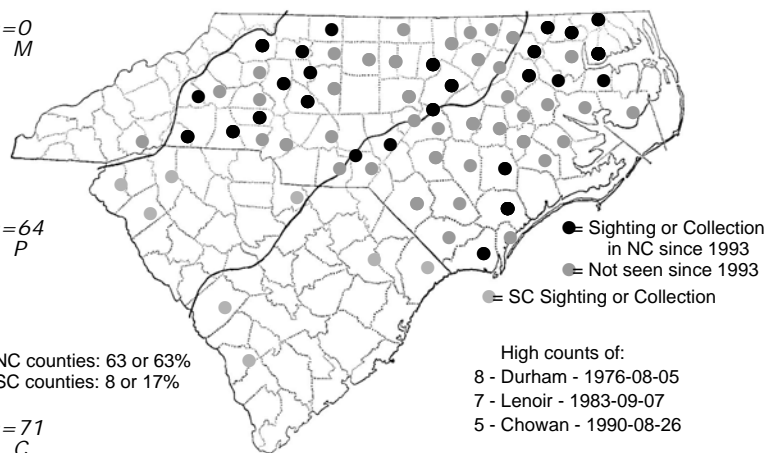
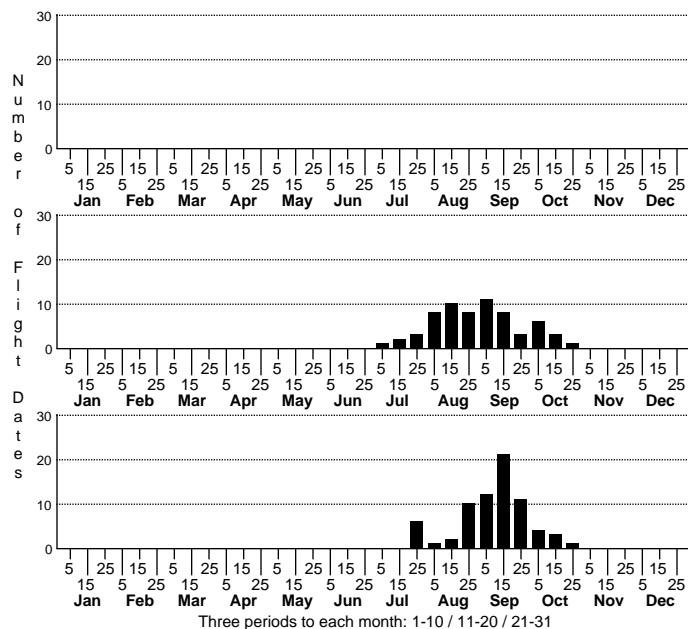
**FLIGHT:** Mid-June into early October in the Piedmont. In the mountains, the flight is narrower, with records only from early August to early October. In the Coastal Plain, the few records fall between mid-June and mid-July, though it certainly occurs into the fall season there. In GA it flies from early or mid-June into September (Beaton 2007).

**HABITAT:** Mainly breeds at small to medium-sized creeks, where clean and with a sandy bottom.

**BEHAVIOR:** Males are most often seen perched on leaves close to the water. Though they forage during the middle of the day, the species is most active late in the day. Thus, this species can often be difficult to observe because of time of day and infrequency of perching on the ground or in the open.

**COMMENTS:** Considering that Dunkle (2000) calls the species "uncommon" throughout its range, and Beaton (2007) calls it "rare and local" in its GA range, and both indicate its difficulty of observation, it is a pleasant surprise that we have a minimum of 50 records with dates in the state, covering 36 counties. Even so, it is not often encountered, and always just one or two individuals at any one site.

## *Stylurus plagiatus* Russet-tipped Clubtail



Earliest date: Wake 2011-07-07  
Latest date: Lincoln 1993-10-28

Status	Rank
NC US	NC Global
- -	S4S5 G5

**DISTRIBUTION:** Throughout the Piedmont and nearly all of the Coastal Plain, though probably absent in the far eastern counties; only one county record for the mountains, where essentially absent. No records east of Gates, Chowan, and Hyde counties.

**ABUNDANCE:** Though there are records for close to two-thirds of the counties in the state, it is uncommon in most of the Piedmont and Coastal Plain; very scarce near the coast and in the foothills. Status in the mountains not known, but presumed absent in most areas (known only from Transylvania County).

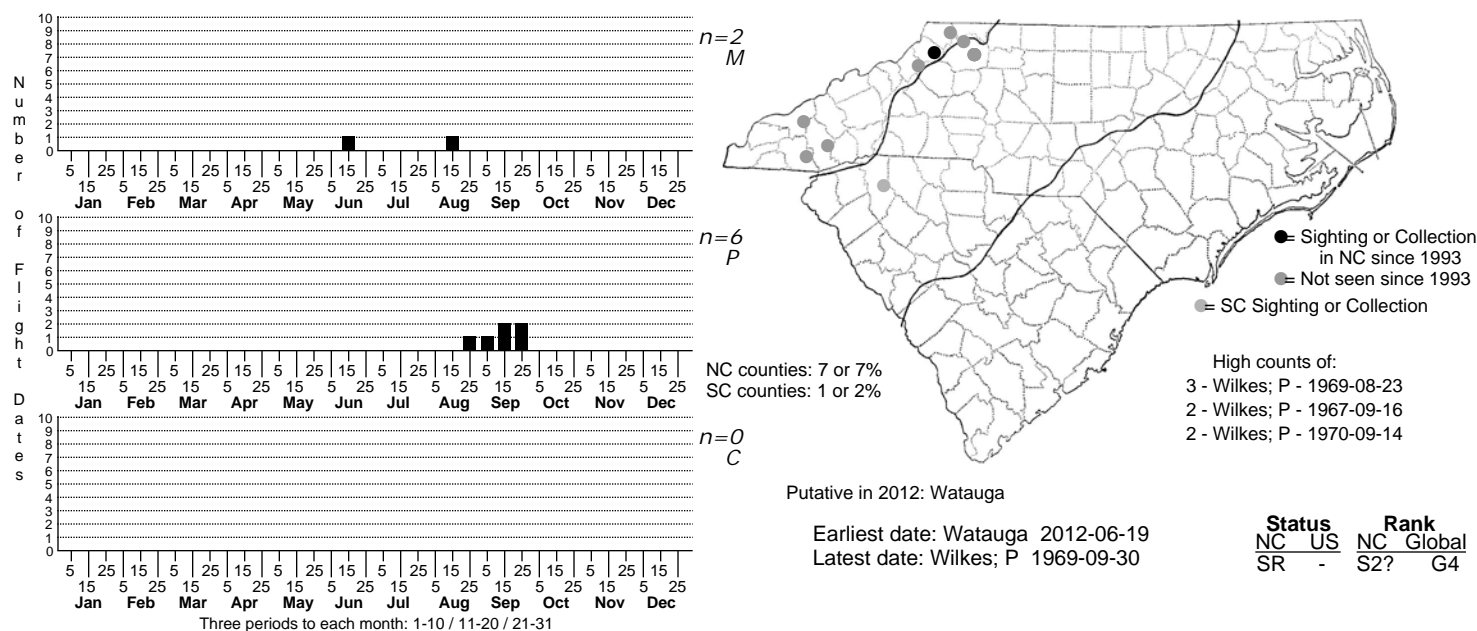
**FLIGHT:** Mid-summer into mid-fall. The flight occurs from early July to late October, though the earliest record for the Coastal Plain isn't until late July.

**HABITAT:** Mainly at rivers and larger streams, but also at some lakes; silty or sandy bottoms.

**BEHAVIOR:** Often perch on leaves near the water's edge, such that the weight of the body bends the leaf downward until the animals are almost in a vertical position. Adults forage in long flights over the rivers and creeks.

**COMMENTS:** This species, along with the Southeastern Spinyleg, has a large and bright orange/red club that is easily seen at a distance. This species can thus be fairly easily identified without a net as it cruises along a river or stream. Despite well over 130 records with dates available, only a few are for the past few years. That might suggest a decline in the population, but as most clubtails show the same "trend" -- few recent records as compared with collection records from pre-1995 -- it likely represents a scarcity of recent field work targeting clubtails (such as work with nets along the margins of rivers and creeks).

## *Stylurus scudderi* Zebra Clubtail



**DISTRIBUTION:** Mountain province only; probably occurring throughout the mountains, as there is a record for northern GA. This is a Northern species, and NC lies near the southern edge of the range.

**ABUNDANCE:** Rare to uncommon. Known from just seven of the mountain counties. Dunkle (2000) calls the species as "fairly common" over its range, though clearly in NC it isn't this numerous, as there is just one recent record.

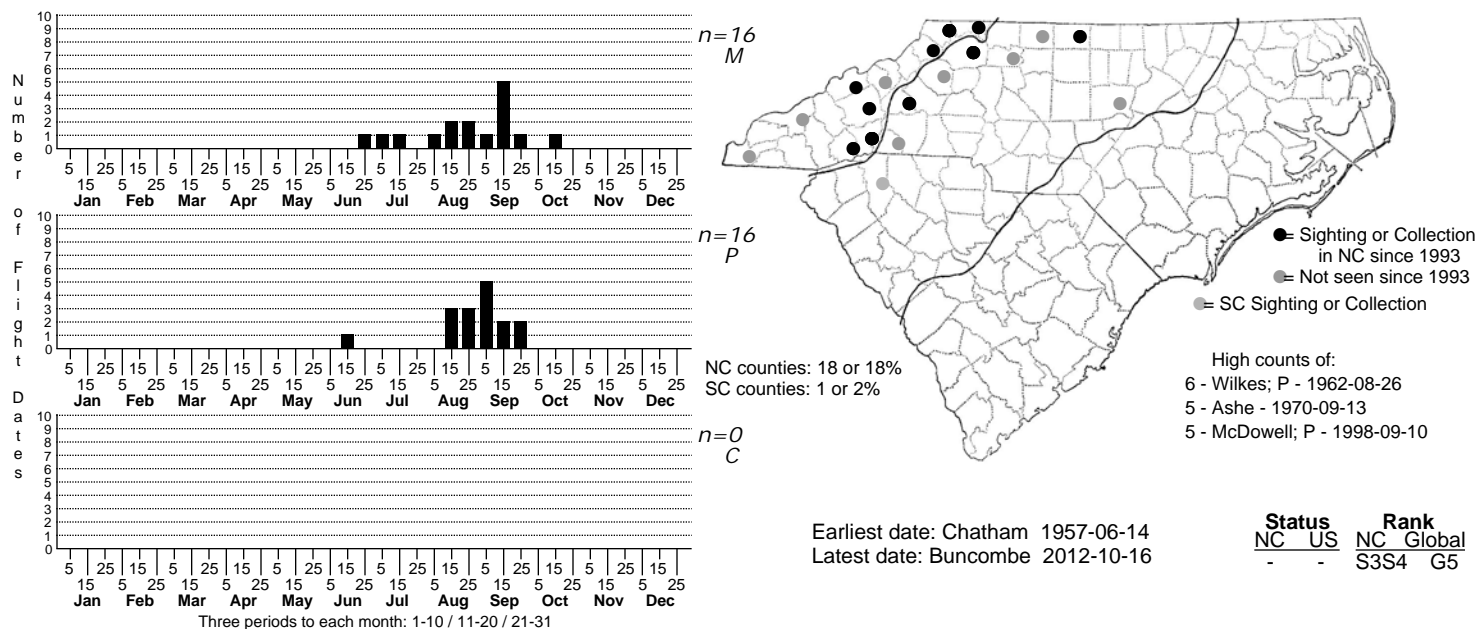
**FLIGHT:** "Mid-June to early Oct." (Dunkle 2000). All NC records with dates are from late August to late September, except for the only recent record -- for 19 June.

**HABITAT:** Cool, swiftly flowing creeks and smaller rivers, in forested areas.

**BEHAVIOR:** Males perch on low sites, such as twigs, leaves, and at times on the ground. They make short patrols over riffles of the creeks.

**COMMENTS:** This is one of many clubtails that is essentially restricted to the mountains in NC, and therefore is known to very few people. Fortunately, the species (especially males) is easy to identify by the bold pale rings around abdominal segments and the fairly wide club. Adults are considered to be a bit wary, and thus the species is probably not as scarce in NC as the few records imply. However, as there is just one recent record, the NC Natural Heritage Program has revised the state rank from S3? to S2?

## *Stylurus spiniceps* Arrow Clubtail



**DISTRIBUTION:** Essentially throughout the mountains and Piedmont foothills, and sparingly east in the Piedmont to Rockingham County. A record for Chatham County, far to the east and southeast of other records, might be of a stray.

**ABUNDANCE:** Uncommon, at least locally, in the mountains and foothills. Rare into the northern Piedmont, at least away from the foothills.

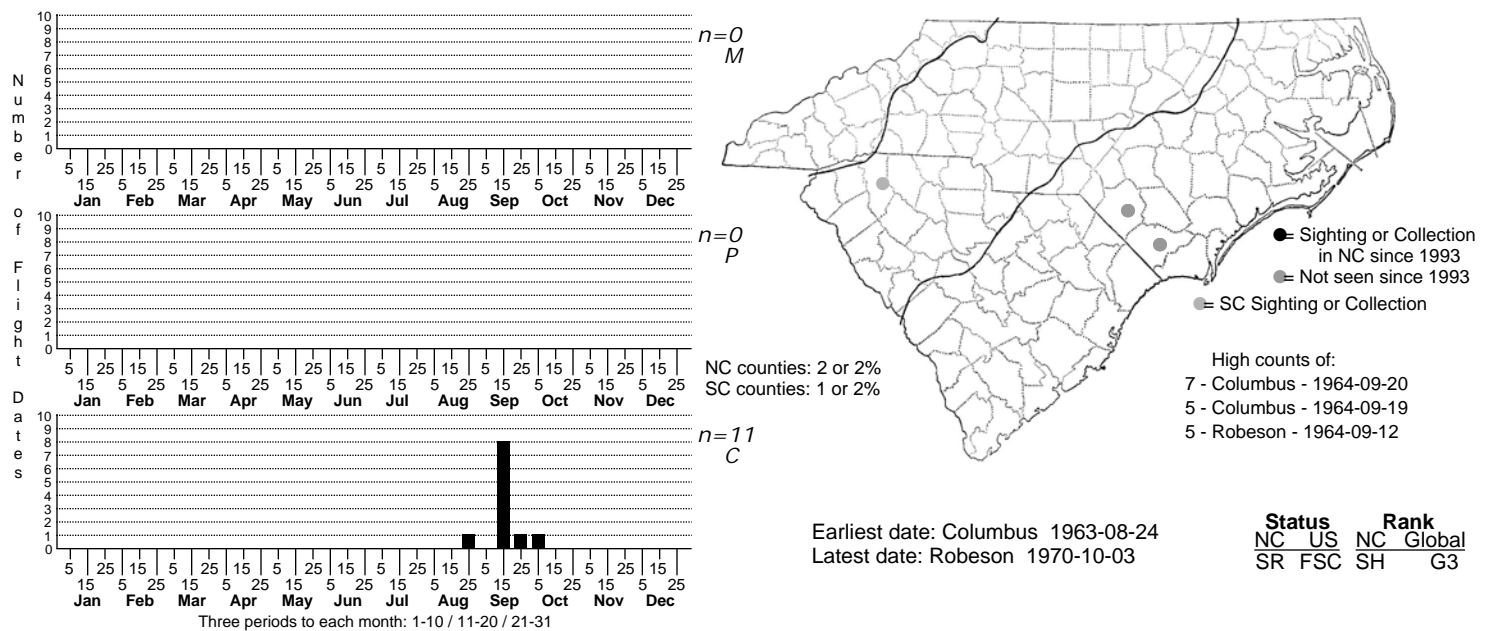
**FLIGHT:** Mainly in late summer and fall, but many dates starting in early summer. Flight is from mid- or late June to mid-October; generally from mid-August to late September.

**HABITAT:** Large rivers, less so at large streams or at lakes. Favors sandy bottoms.

**BEHAVIOR:** Males are very strong fliers and may forage a long distance from water, in fields and other places. As with other *Stylurus* species (the "hanging clubtails"), males in particular may perch on a leaf and hang vertically on it as the leaf bends under the weight of the insect. They also forage in large flights over water.

**COMMENTS:** This large species has an unusually long (and slender) abdomen, giving rise to the common name, as it does resemble an arrow in some respects. It is not one of the rarer clubtails in the mountains and foothills; however, because there are relatively few biologists working these regions, there are still many holes in the county range map for it, especially west of Buncombe County.

## *Stylurus townesi* Townes's Clubtail



**DISTRIBUTION:** Known in NC only from the extreme southeastern corner of the state -- Robeson and Columbus counties (i.e., the Lumber River). This is a poorly known Southeastern species ranging southwest to MS and n.w. FL, but with large gaps in the range. Interestingly, the sole SC record is from Greenville County (upper Piedmont). Thus, it should not be assumed that this species is restricted in NC to just the southeastern corner.

**ABUNDANCE:** Not rare, at least formerly, along a short section of the Lumber River; however, there have been no reports in the state in nearly 50 years, and thus it is not clear if it has declined or if no one has surveyed this section of the river in recent decades. Dunkle (2000) calls it "scarce" throughout its range.

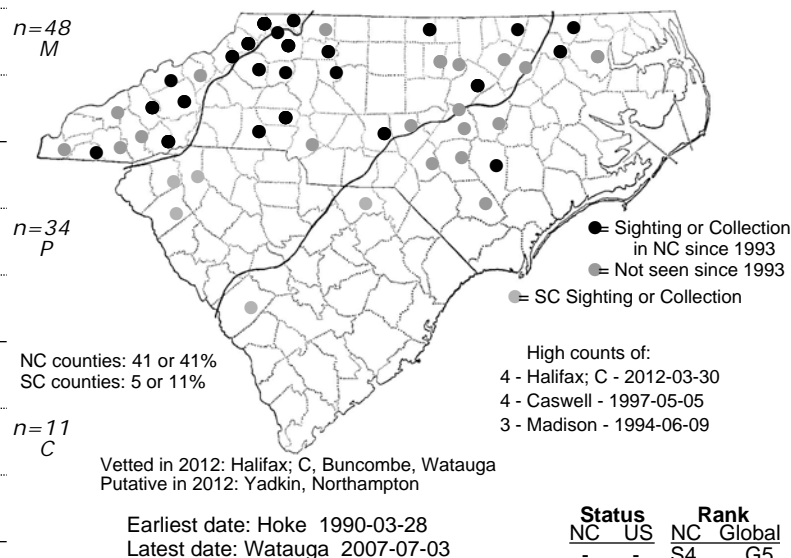
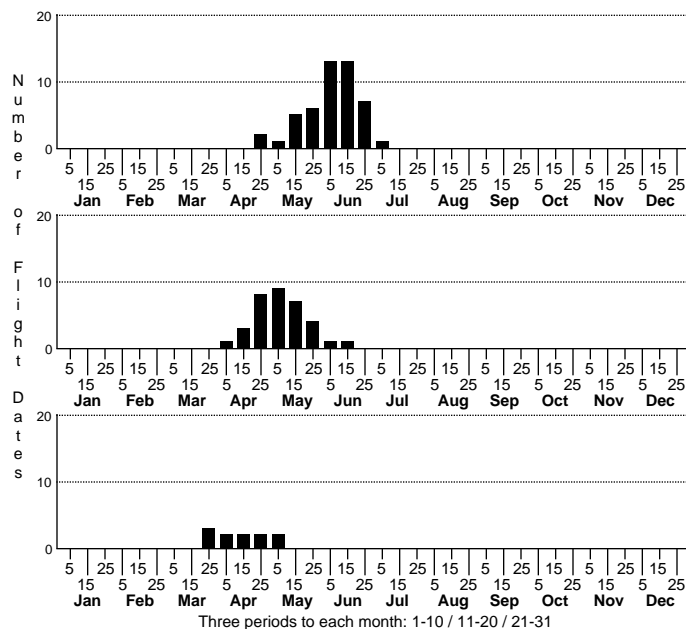
**FLIGHT:** "Early June to late Sept." (Dunkle 2000). The 11 state records with dates fall between late August and early October.

**HABITAT:** Forested creeks and rivers with sandy bottoms and clean water.

**BEHAVIOR:** Males apparently forage mainly in low light conditions in early morning, cloudy weather, or near dusk. Males seldom make patrols over water, but forage from twigs along the water's edge.

**COMMENTS:** This species is so poorly known that it has not even been recorded from one state -- GA -- that lies near the center of the range. Even though Belle's Sanddragon may have the most restricted range in the NC Coastal Plain of any dragonfly, the Townes's Clubtail may well be the poorest known in that province, as only Dunkle (2000) and Paulson (2011) contain information about the species. There was a flurry of collections of this species in the Fair Bluff area of Columbus County along the Lumber River in the 1960s; whether it still occurs in NC at present is not known, though it is doubtful that biologists have searched the river for dragonflies in mid-September in recent years. In 2012, the NC Natural Heritage Program moved its NC Rank from S1 (very rare) to SH (Historical); this does not mean that it is thought to be extirpated, but that there is no information to indicate that it currently still exists in the state. However, as the Lumber River is still heavily forested in many areas and is a State Natural and Scenic River, there is a good chance that Townes's Clubtail still occurs there, if not elsewhere in the state.

## *Cordulegaster bilineata* Brown Spiketail



**DISTRIBUTION:** Throughout the mountains, and scattered across the Piedmont and the western portion of the Coastal Plain, including the Sandhills. Apparently absent east of Bertie, Sampson, and Bladen counties.

**ABUNDANCE:** Fairly common in the mountains (at least in the northern counties), but apparently uncommon in the western Piedmont, and rare to uncommon in the eastern Piedmont and Coastal Plain portion of the range. Much more common in the mountains than downstate. Possibly less numerous in the central Piedmont than on either side, as there are many records eastward and westward but with many counties lacking records in this part of the Piedmont.

**FLIGHT:** Late April to early July in the mountains, but slightly advanced (as expected) in the Piedmont, where it flies from early April and extends at least to mid-June (if not later). The relatively few dates for the Coastal Plain fall from late March only to early May, but the flight surely must extend into June there.

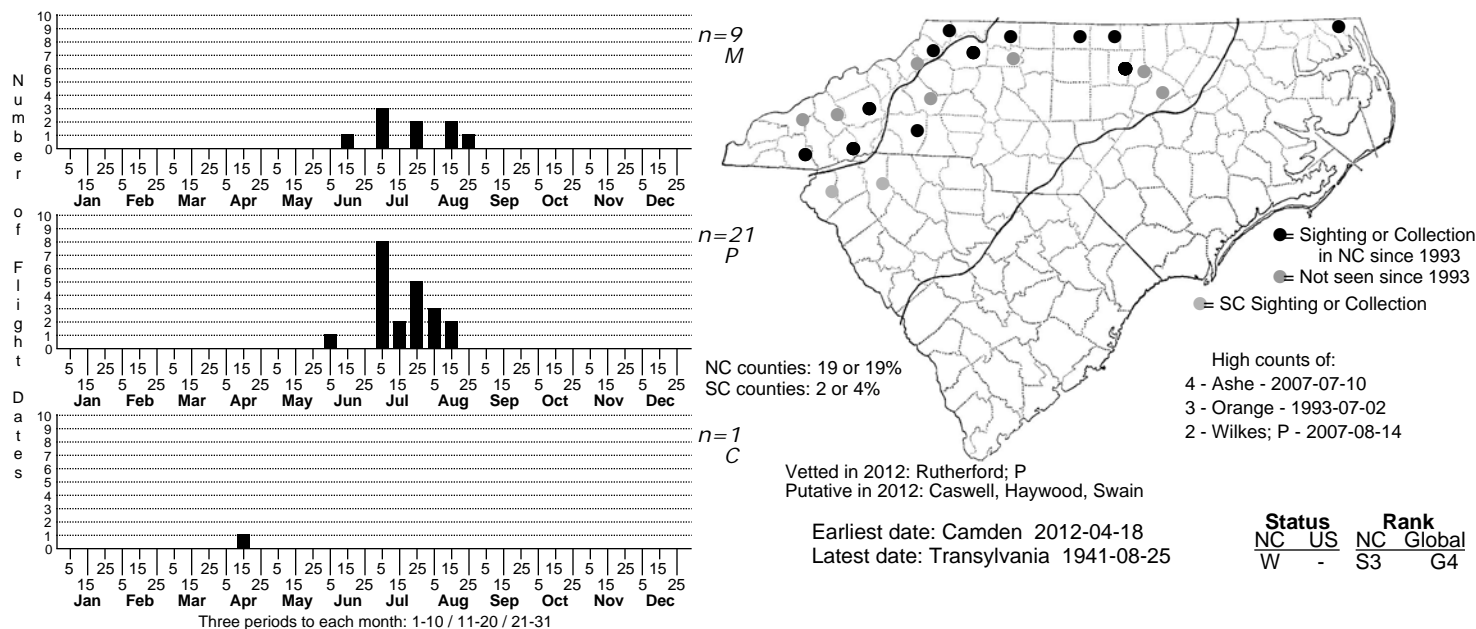
**HABITAT:** Small streams or seeps, often with little flow; typically in wooded areas.

**BEHAVIOR:** Typically flies slowly over streams or seeps or in nearby clearings. Perches on low twigs, in an oblique manner typical of spiketails.

**COMMENTS:** This species can be confused with the somewhat similar, but slightly more widespread and definitely more numerous, Twin-spotted Spiketail. Both can occur together along mountain and Piedmont wooded roadsides and clearings along woods and small creeks. This species might have a slight bimodal distribution, as it seems surprisingly scarce in the central Piedmont. Steve Hall and Harry LeGrand saw and photographed the species on several occasions in 2012 near the Roanoke River, adding first records for Halifax and Northampton counties.



## *Cordulegaster erronea* Tiger Spiketail



**DISTRIBUTION:** Widely scattered across the mountains, foothills, and the northern third of the Piedmont. Presence in the southeastern half of the Piedmont is uncertain, though there are no records between Rutherford and Wake counties.

**ABUNDANCE:** Uncommon in the Piedmont foothills, but rare in the true mountains and eastward in the Piedmont toward the Fall Line. Dunkle (2000) calls it "local" throughout its range, Paulson (2011) calls it "rather rare" over its range, and Beaton (2007) says "Uncommon to rare and local" in GA.

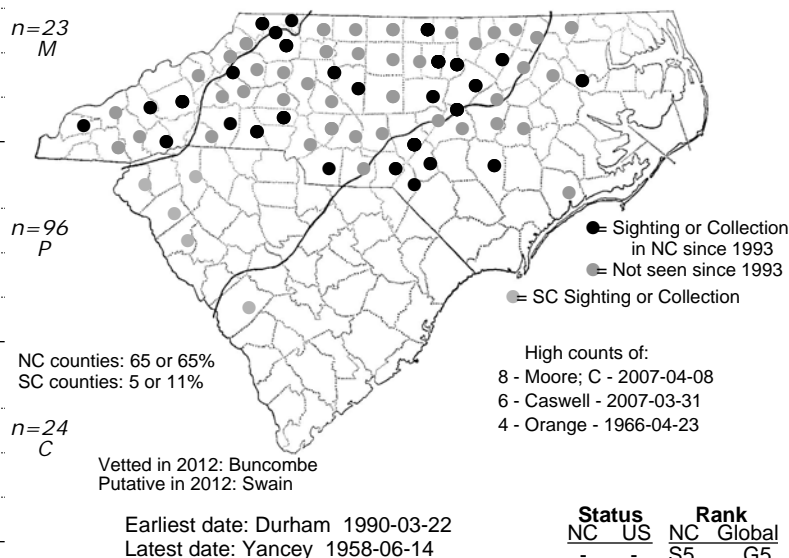
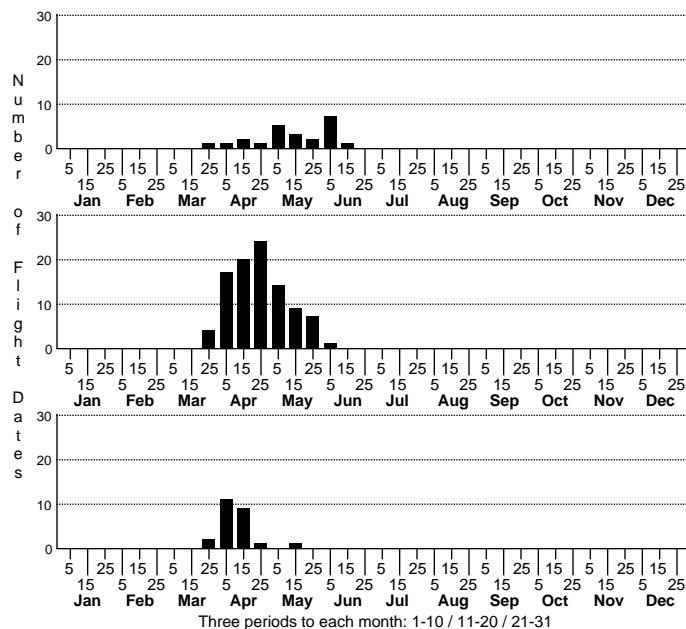
**FLIGHT:** The flight in the Piedmont is from early June to mid-August, with that in the mountains slightly later -- mid-June to late August.

**HABITAT:** Small streams or seeps, without fish; in partial shade. Streams may be rocky, but may have a sandy substrate.

**BEHAVIOR:** Males cruise in the vicinity of the seeps, though they can be difficult to find when perched. The males are more active late in the day, and may fly and perch well away from seeps.

**COMMENTS:** For a species with a potentially wide range in NC (potential to occur in 50-60% of the counties), it is not one of the more familiar spiketails. Perhaps its seepage habitat is spotty and local, or else the behavior of the species makes it difficult to find. Thankfully, a handful of recent records have been made in the past few years, often documented with photos. The NC Natural Heritage Program considers it to be a Watch List species.

## *Cordulegaster maculata* Twin-spotted Spiketail



**DISTRIBUTION:** Throughout the Piedmont, perhaps throughout the mountains, and the western third of the Coastal Plain, being apparently absent from counties east of Martin, Wayne, and Sampson (except for an Onslow County record). Of somewhat spotty distribution in the southern half of the mountains. The range is thus somewhat similar to that of the Brown Spiketail in NC, but that species has been found in many fewer counties and its abundance is centered in the mountains and foothills.

**ABUNDANCE:** Fairly common in the Piedmont, uncommon in the mountains and extreme western Coastal Plain, but scarce in the central Coastal Plain. Though not as numerous as many other spring-flying dragonflies, it is the most often seen spiketail in NC (but often outnumbered in the mountains by the Brown Spiketail).

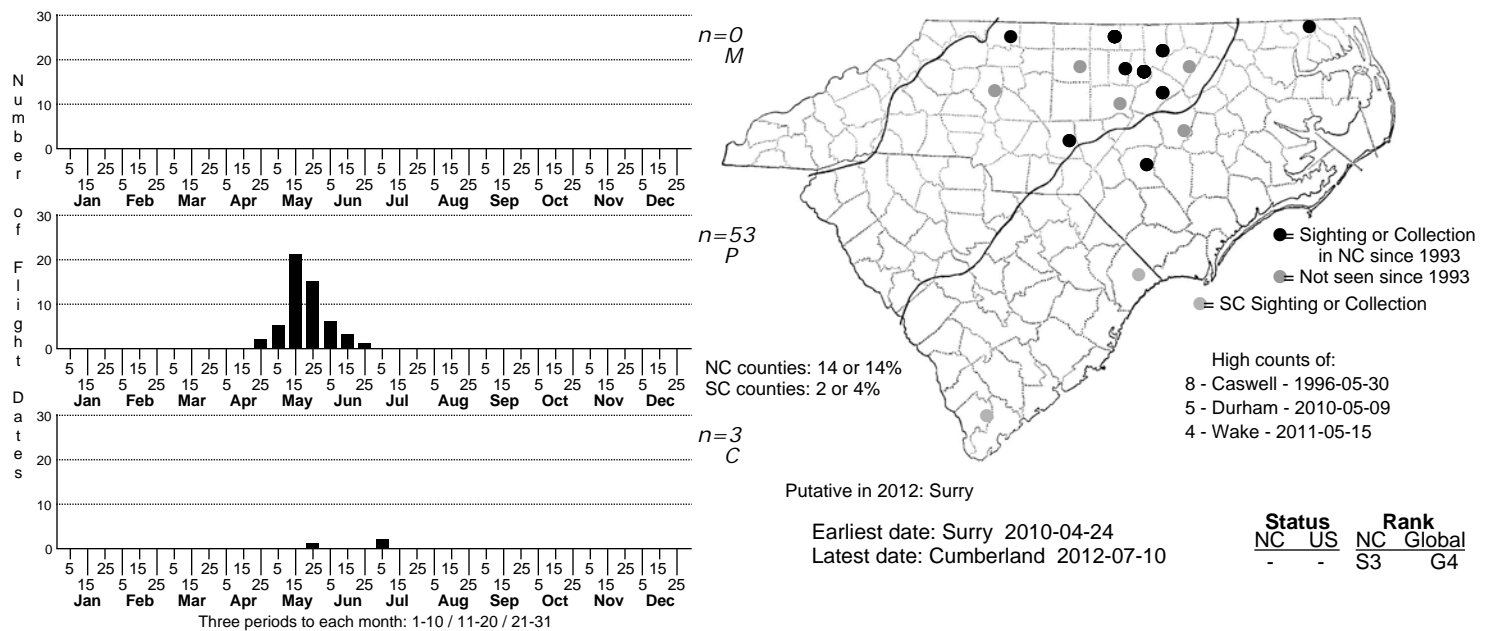
**FLIGHT:** Downstate, primarily from very late March to late May, with the peak in April. The mountain flight occurs from late March to mid-June, though it is scarce before May.

**HABITAT:** Creeks or small rivers, of many sizes and substrates, for breeding. These are typically in forested or semi-shaded areas and fairly pristine or clear waters.

**BEHAVIOR:** Males cruise along streams, but adults are more often seen well away from water along wooded roads or wide trails or wood margins. They perch conspicuously on twigs and other vegetation, in an oblique manner, typically only a foot or two above the ground, where easily studied.

**COMMENTS:** This is one of the larger and more spectacular of the spring-season (only) dragonflies. It can be confused with the Brown Spiketail, which is less numerous (except in the mountains), is browner on the abdomen, has somewhat more equal-sized yellow spots on the abdomen, and is slightly smaller in length.

## *Cordulegaster obliqua* Arrowhead Spiketail



**DISTRIBUTION:** Though reference books show the range of the species to occur statewide (and across most of the Eastern US), NC records fall only in the central and eastern Piedmont, and the western portion of the Coastal Plain. Ranges west to Surry and Iredell counties in the Piedmont and Gates County in the northern Coastal Plain, but most records fall in the northeastern portion of the Piedmont.

**ABUNDANCE:** Uncommon in the eastern third of the Piedmont, rare to uncommon in the central Piedmont, and very rare in the Coastal Plain.

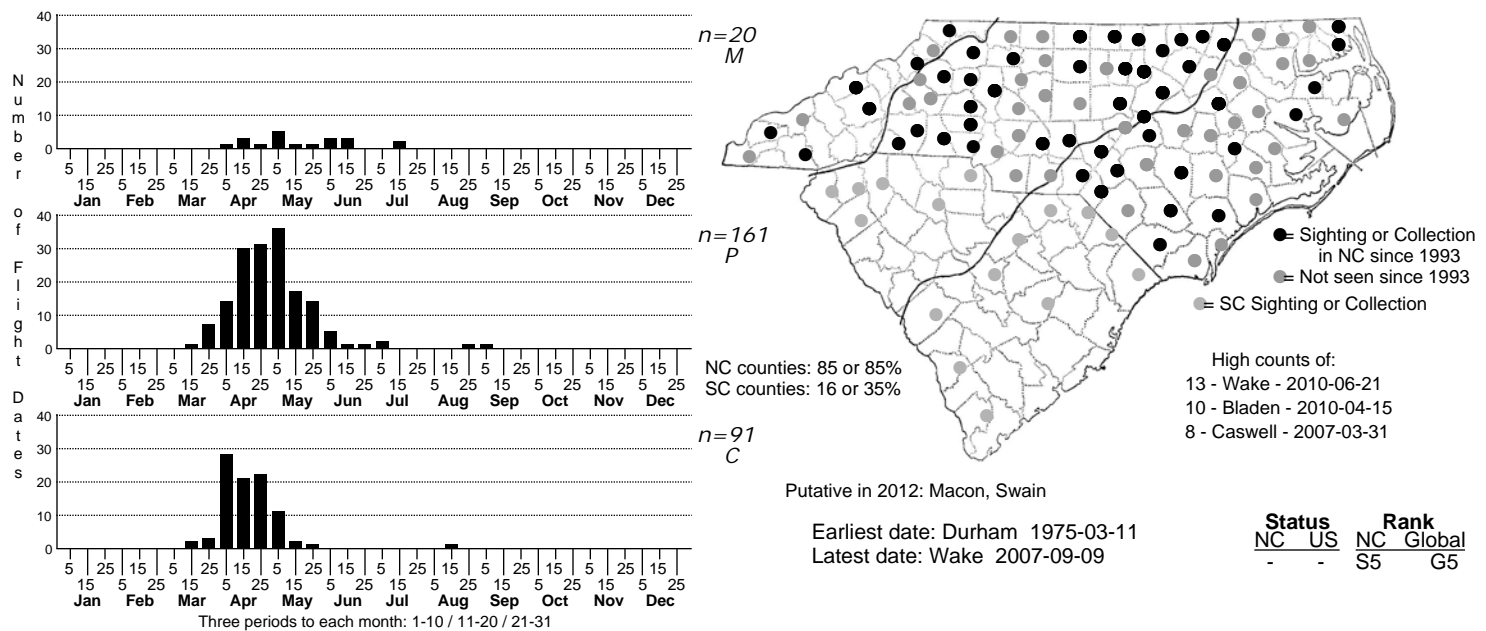
**FLIGHT:** The flight occurs during the two months from late April to late June, with the peak in the latter half of May.

**HABITAT:** Very small streams and seeps, in wooded/shaded habitats.

**BEHAVIOR:** As with all spiketails, adults often forage long distances from their forested streams. The species is most often seen along wooded trails or roads, perching low to the ground on a twig. However, unlike other spiketails, it has a habit of flying off high, often over trees, once disturbed.

**COMMENTS:** This, the largest of our four spiketails in NC, is always a thrill to see. Its dorsal yellow abdominal markings (not paired as in other spiketails) indeed look like arrowheads, rendering it easy to identify. Fortunately, it is not overly scarce in the eastern Piedmont; an active observer there has a reasonable chance to encounter it each year.

## *Didymops transversa* Stream Cruiser



**DISTRIBUTION:** Essentially statewide, but of spotty occurrence in the mountains (with only nine county records). Also, scarce along the extreme northeastern coastal areas (where most dragonfly species are also scarce to absent).

**ABUNDANCE:** Fairly common to common, and very widespread, across the Piedmont and at least the western half of the Coastal Plain. Uncommon in the lower Coastal Plain, and rare to uncommon in the mountains.

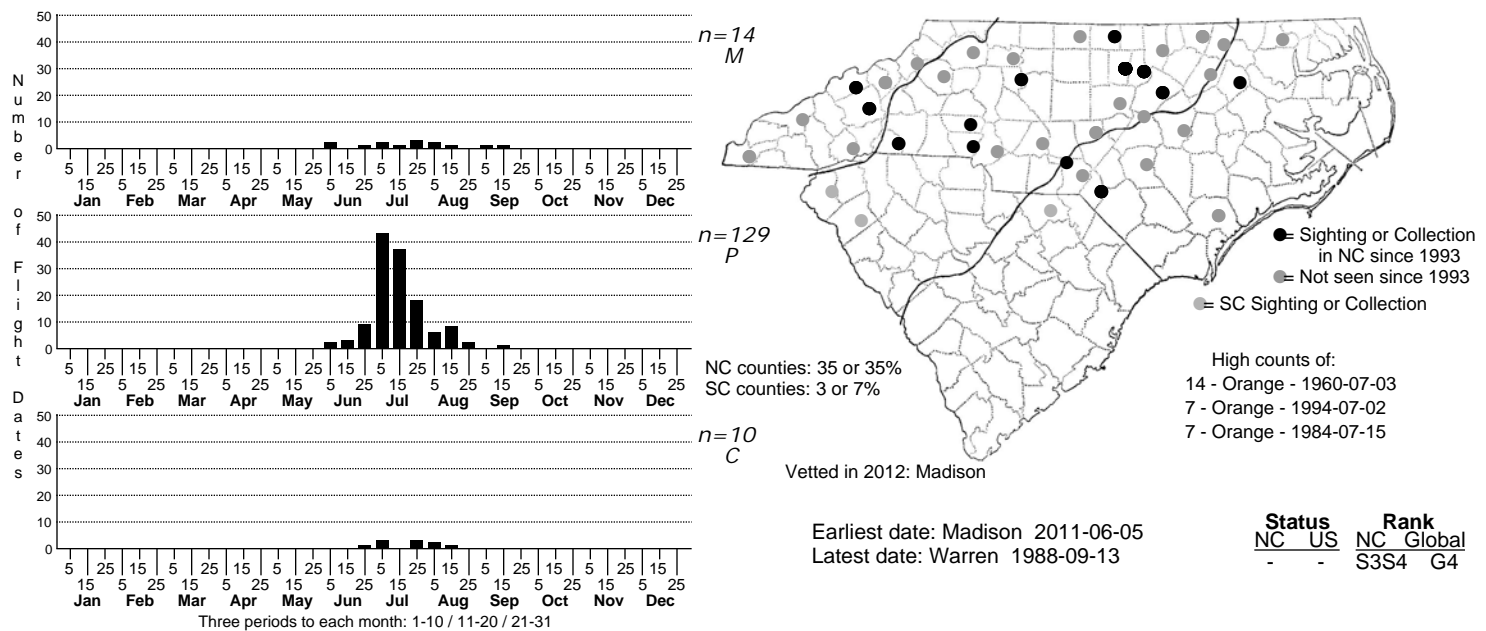
**FLIGHT:** Mid-March to mid-July, though primarily in the spring. There are a few records well into August and early September, but the flight is generally over in July. The flight in the mountains starts in early April.

**HABITAT:** A wide variety of creeks and rivers (though typically smaller rivers); rarely at lakes.

**BEHAVIOR:** Males patrol back and forth across streams. Adults are more often seen flying and perched well away from water, along dirt roads, sunny trails, and edges. They perch obliquely on twigs and other vegetation low to the ground, as do spiketails and darners (with which they often fly).

**COMMENTS:** Other than another *Didymops* species in Florida, this is the only member of its genus in most of the United States. Though unique from that standpoint, at a casual glance it could be confused with some darners, spiketails, or river cruisers. However, it is easily separated from all but river cruisers by its single yellow band on the side of the thorax, its yellow facial bar, and single yellow spots (not paired) on the top of the abdominal segments. The river cruisers have green (or brighter green) eyes and are blacker on the abdomen (not so brown), they fly later in summer, and they seldom perch near the ground. The Stream Cruiser is reasonably unwary, often allowing close study while perched obliquely on a twig.

## *Macromia alleghaniensis* Allegheny River Cruiser



**DISTRIBUTION:** Scattered across the mountains, Piedmont, and western Coastal Plain, with a disjunct (?) record from Pender County. Though probably occurring in all counties east to Hertford, Nash, Harnett, and Scotland, the range is spotty, probably owing mainly to the difficulty of identification (without a specimen).

**ABUNDANCE:** Uncommon to perhaps locally fairly common in the Piedmont, and rare to uncommon in the mountains and Coastal Plain. Very rare to absent over nearly all of the eastern half of the Coastal Plain. range. Poorly known by recent observers because of difficulty in separation from both the Swift River Cruiser and the Mountain River Cruiser without a specimen.

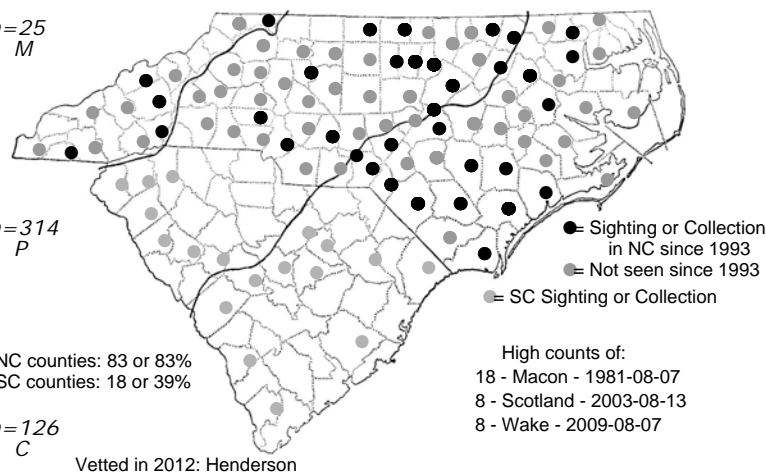
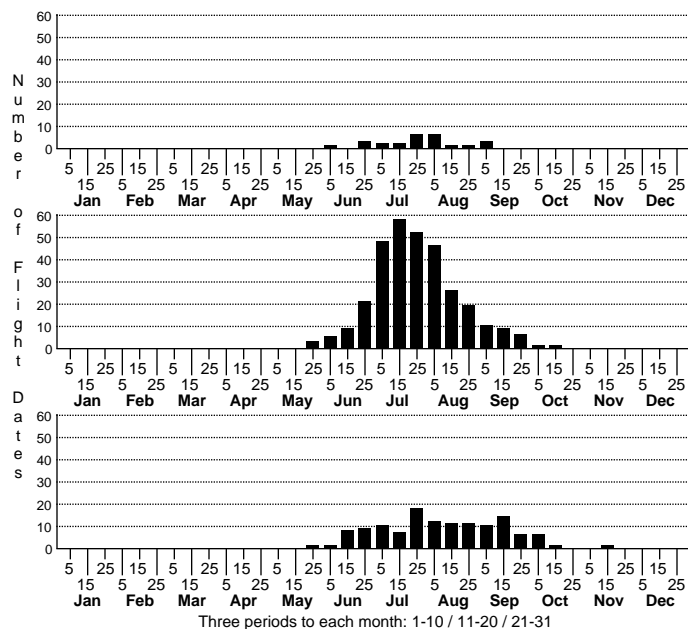
**FLIGHT:** The flight in the Piedmont and mountains occurs between early June and mid-September. This is likely also the flight period in the Coastal Plain, but known records there fall in a narrower range from late June to mid-August.

**HABITAT:** Creeks and rivers.

**BEHAVIOR:** Similar to other river cruisers, in that males cruise back and forth quickly along the length of the stream. Adults often forage in long patrols along wooded roads and wide trails, typically higher later in the day. They can be difficult to see perched.

**COMMENTS:** Though an observer without a net can frequently identify a "river cruiser" by its bright green eyes, yellow spots or bands on the black abdomen, and rapid back and forth cruising along a creek or a dirt road, identification of most species is tricky, even when seen perched. Often, they must be identified in the hand, or collected to study the genitalia. This species has a nearly complete yellow ring on abdominal segment 2 (a slight break dorsally). Refer to reference books and photos for identification. The scarcity of observational data in NC is understandable, as such data likely would be inconclusive or questionable (without photo or specimen).

## *Macromia illinoiensis* Swift River Cruiser



High counts of:  
18 - Macon - 1981-08-07  
8 - Scotland - 2003-08-13  
8 - Wake - 2009-08-07

Earliest date: Chatham 1965-05-26  
Latest date: Pender 1994-11-14

Status		Rank	
NC	US	NC	Global
-	-	S5	G5

Other Name: Illinois River Cruiser, Georgia River Cruiser

**DISTRIBUTION:** Essentially statewide, but as with nearly all such species, it is absent (or essentially so) from the extreme northeastern counties. No records east of Gates, Chowan, or Beaufort counties (except for Hyde County).

**ABUNDANCE:** Fairly common and widespread in most of the Piedmont and upper Coastal Plain, including the Sandhills; can be locally common near the Fall Line. Uncommon to perhaps fairly common in the mountains and foothills, as well as the lower Coastal Plain. Certainly the most numerous river cruiser in the mountains, Piedmont, and upper Coastal Plain (though it can be outnumbered in the Coastal Plain by the Royal River Cruiser).

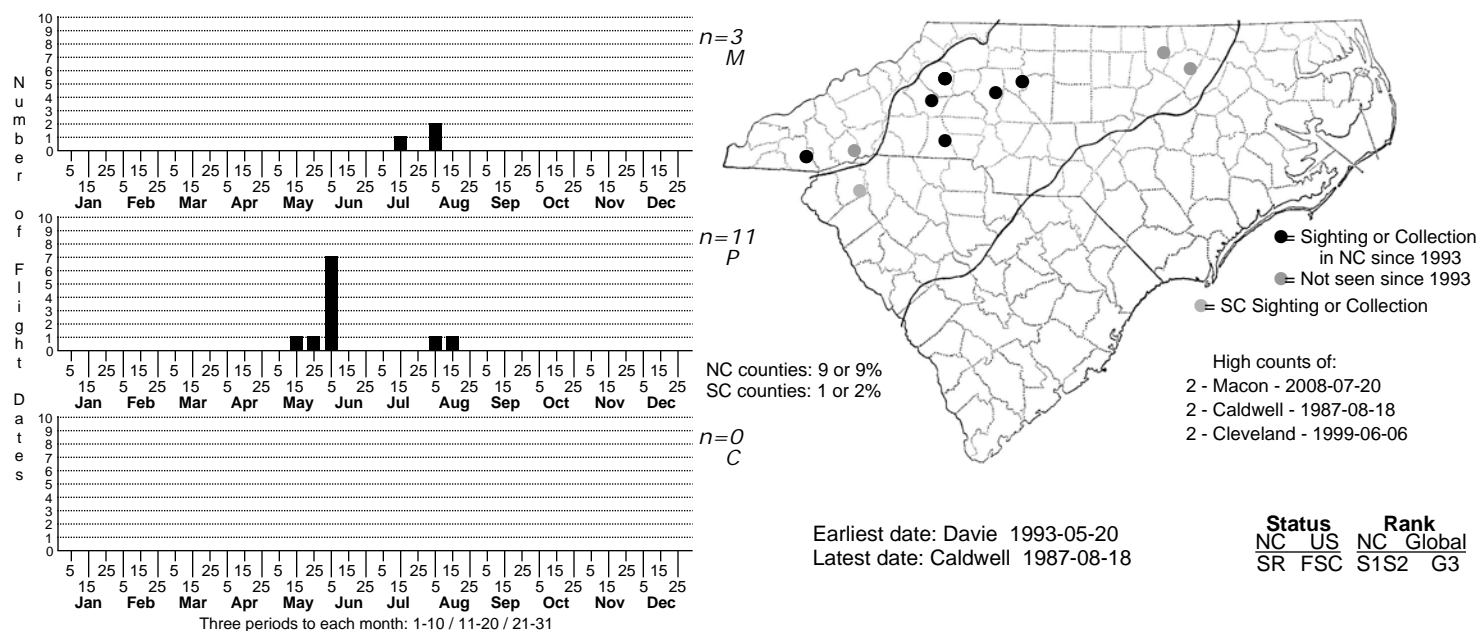
**FLIGHT:** A fairly wide flight period, from late May to mid-October downstate, and at least from early June to early September in the mountains. One very late record for 14 November.

**HABITAT:** Rivers and creeks, preferably in smaller rivers as compared with large ones.

**BEHAVIOR:** Very similar to other river cruisers, it can usually be seen when adults are cruising back and forth on long patrols along dirt roads or wide trails through forests, often well away from water. Males patrol along the length of a creek or small river.

**COMMENTS:** There are two subspecies found in NC and other Southeastern states. The subspecies *M. i. georgina* ("Georgia River Cruiser") is found across most of the Piedmont and Coastal Plain, whereas the nominate subspecies (often called "Illinois River Cruiser") is more northern and is found in the mountains. Most sightings of river cruisers in NC refer to "Georgia", as this form is not uncommonly seen in mid- and late summer along wide trails and dirt roads through forests in the Piedmont. It has more obvious dorsal yellow spots on most abdominal segments than does the nominate subspecies and the Allegheny River Cruiser (which have a large dorsal spot on abdominal segment 7 but fewer spots otherwise on the abdomen).

## *Macromia margarita* Mountain River Cruiser



**DISTRIBUTION:** This is a very poorly known species that is limited to the southern Appalachians and adjacent Piedmont. In NC, there are records for nine counties in the mountains and Piedmont. The easternmost record is from Franklin County. Much more data are needed to determine the range in NC and in the US.

**ABUNDANCE:** Rare or at least very difficult to identify, in the lower mountains and Piedmont foothills. Presumed very rare eastward over the rest of the Piedmont, and seemingly absent from the southeastern portion of the Piedmont.

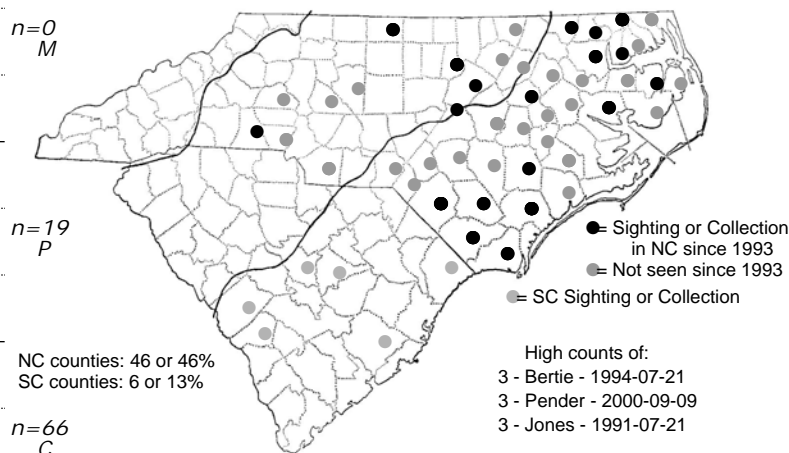
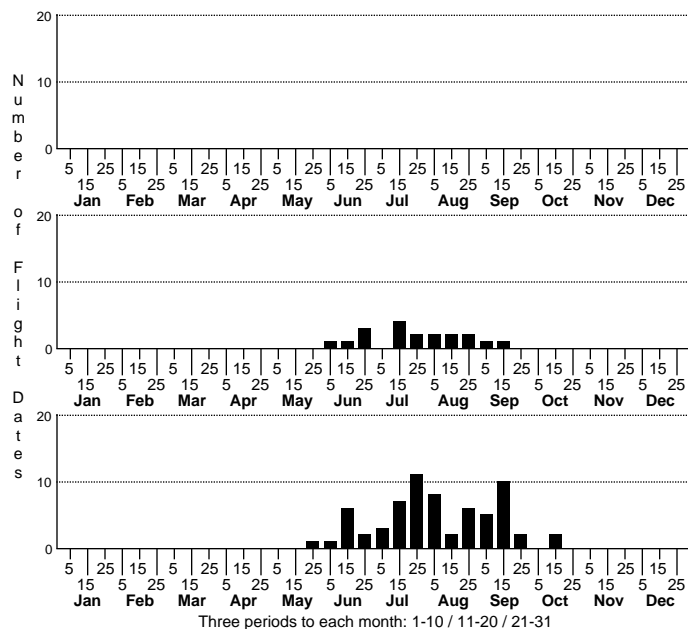
**FLIGHT:** "Early June to late Aug." in the overall range (Dunkle 2000). The 14 records in the state with dates available fall between mid-May and mid-August. However, of the 11 records with dates for the Piedmont, nary a one is from July, making the species look like it has two flight periods!

**HABITAT:** Creeks and rivers that are clean and fast-flowing.

**BEHAVIOR:** Very little reported. Males patrol lengthwise along creeks and rivers. How often it flies and perches away from the breeding sites has not been reported.

**COMMENTS:** This might be the most difficult dragonfly to identify in the state, even more so than some clubtails. It very closely resembles both Allegheny and Swift river cruisers; thus, a specimen (or possibly a photograph) would be needed to confirm the species. There is a report of one found dead at Hanging Rock State Park in Stokes County; however, the animal was not photographed nor saved, and thus we have removed this "record" from the database. Its global rank (by NatureServe) is just G3, implying that it is one of the less numerous dragonflies in the eastern US. Considering that little collecting, or at least netting and photographing, of odonates takes place in the 21st Century, the range and abundance of this species will likely be unclear for years to come.

## *Macromia taeniolata* Royal River Cruiser



Earliest date: Columbus 2003-05-24  
Latest date: Robeson 1960-10-16

Status		Rank	
NC	US	NC	Global
-	-	S4	G5

**DISTRIBUTION:** Essentially throughout the Coastal Plain, but only scattered over the eastern 2/3rds to 3/4ths of the Piedmont. Ranges west to Rockingham, Catawba, and Cleveland counties. Apparently absent in the Piedmont foothills counties, plus the mountains.

**ABUNDANCE:** Difficult to determine because of similarity of appearance to the Swift River Cruiser and the fact that river cruisers perch infrequently or too high in trees for easy observation/photography. Based on the number of records (mostly collections), apparently uncommon to fairly common in most of the Coastal Plain, and rare in the Piedmont. Probably rare in many coastal counties.

**FLIGHT:** Late May to mid-October in the Coastal Plain. Not surprisingly, as there are many fewer records, the known flight in the Piedmont is from early June to mid-September.

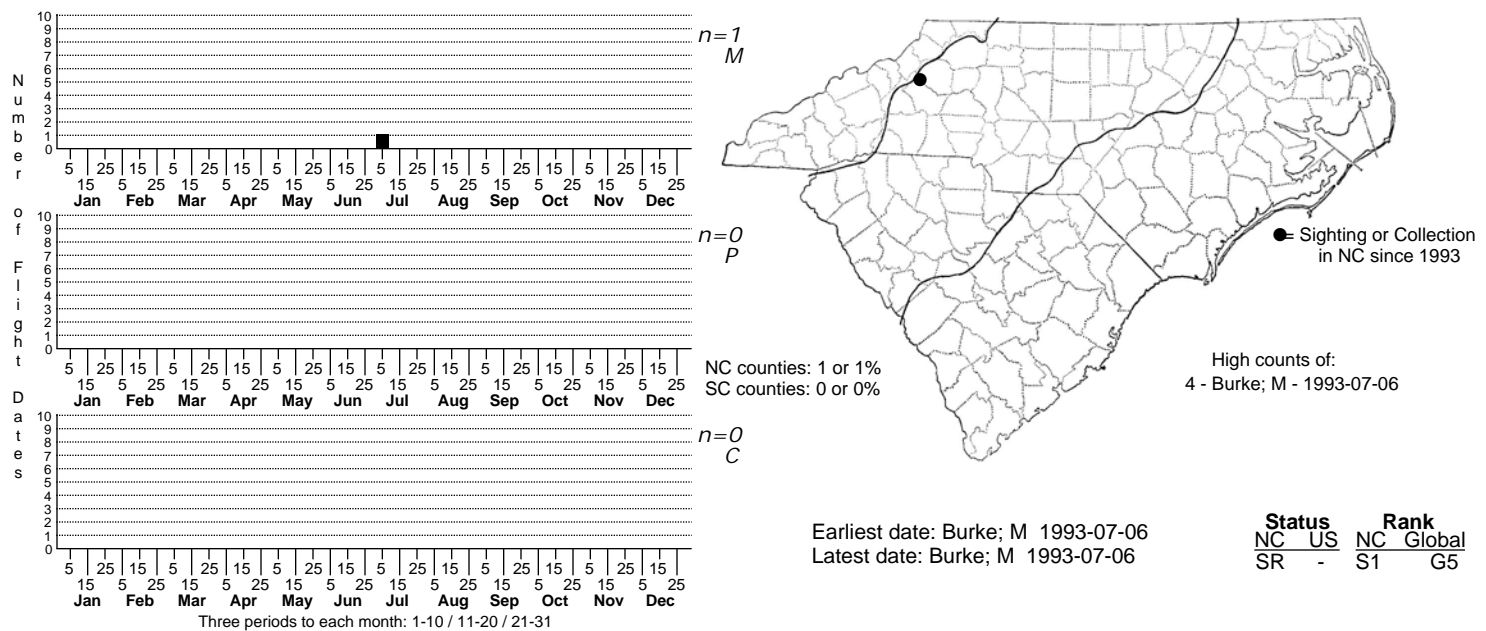
**HABITAT:** Mostly around larger creeks and rivers, rarely at lakes.

**BEHAVIOR:** Males cruise long distances over rivers and larger creeks, mostly more than 6' above the water, and the flight is slower than in other river cruisers. Away from water, they behave like most other river cruisers, flying long beats over roads and sunny trails in forested areas. However, they tend to fly higher than the others in the genus, often 15 or more feet off the ground.

**COMMENTS:** This is one of the longest of the state's dragonflies. However, its abdomen is quite slender, and thus when seen overhead in flight over a road, one can separate it from the similar-sized Swamp Darner (which has a robust and tapered abdomen). Though reportedly it perches often, most will be seen in flight, where it often occurs with Swamp Darners. Because it can be easily confused with other river cruisers, and as the Swift River Cruiser is numerous within the range of this species, observers must be cautious when submitting sight records for the Royal River Cruiser.



## *Cordulia shurtleffii* American Emerald



**DISTRIBUTION:** This is a widespread Northern species, ranging from Alaska to Newfoundland, and south to California and Virginia. There is a single NC record, from Burke County.

**ABUNDANCE:** Undoubtedly very rare in NC. However, it is a common species within the majority of its range.

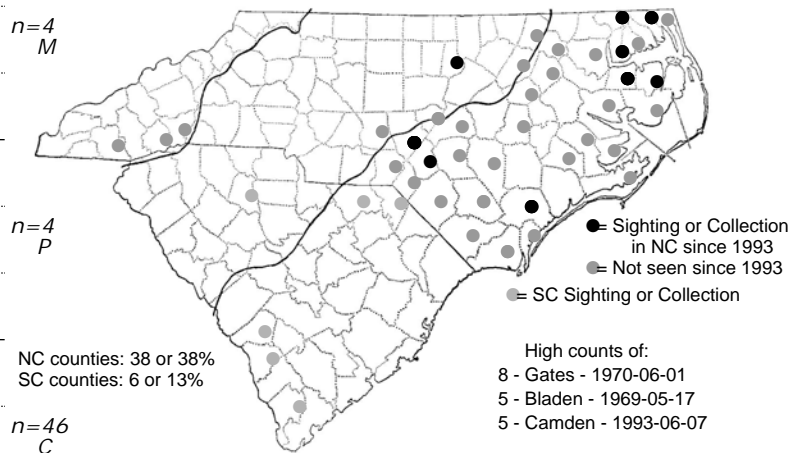
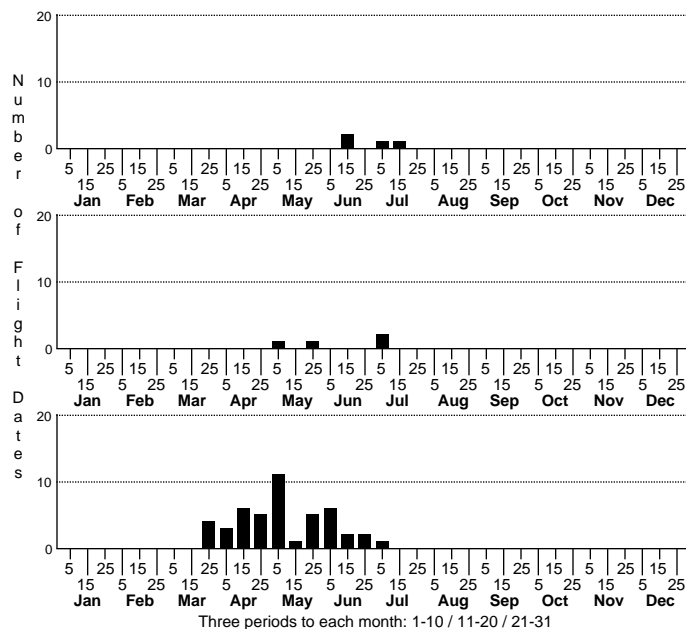
**FLIGHT:** The only NC record is for 6 July. This seems quite late, as Paulson (2011) gives a flight season of May to July for New Jersey, and May to June for Ohio. Thus, one would expect the species to occur from May at least into early July in NC.

**HABITAT:** Still waters of lakes, ponds, or boggy areas, with marshy or damp areas surrounding the water.

**BEHAVIOR:** Males "dart and hover" along shores of its ponds and boggy areas. Adults forage away from ponds along wooded margins. Behavior in NC not reported.

**COMMENTS:** Four individuals were collected by Duncan Cuyler in the Jonas Ridge (mountain) portion of Burke County, in 1993. Perhaps others were seen at the same time; thus, the "4" for the high count is a minimum total present that day. Considering that the species is common and wide-ranging to our north, it ought to occur in some counties between Burke and the VA state line.

## *Epitheca costalis* Slender Baskettail



NC counties: 38 or 38%  
SC counties: 6 or 13%

High counts of:  
8 - Gates - 1970-06-01  
5 - Bladen - 1969-05-17  
5 - Camden - 1993-06-07

Earliest date: Hoke 2008-03-26  
Latest date: Transylvania 1940-07-12

Status	Rank
NC	US
-	-
S4	G5

Other Name: Stripe-winged Baskettail

**DISTRIBUTION:** Essentially just the Coastal Plain, though it does occur in the extreme eastern and southeastern Piedmont and in the southern mountains. Likely present over other portions of the southern Piedmont between Montgomery and Henderson counties. In fact, range maps in Dunkle (2000) and Beaton (2007) show that the species ought to occur over the entire state, except perhaps for the northern mountains! Thankfully, the range map in Paulson (2011) matches that of the range map for NC on this website.

**ABUNDANCE:** Generally uncommon in the Coastal Plain; much less numerous than the Common and Mantled baskettails within its Coastal Plain range. Certainly very rare to rare in the eastern Piedmont and southern mountains (and apparently absent elsewhere in these provinces). However, as the species is difficult to positively identify without hand examination, its true abundance is only speculation.

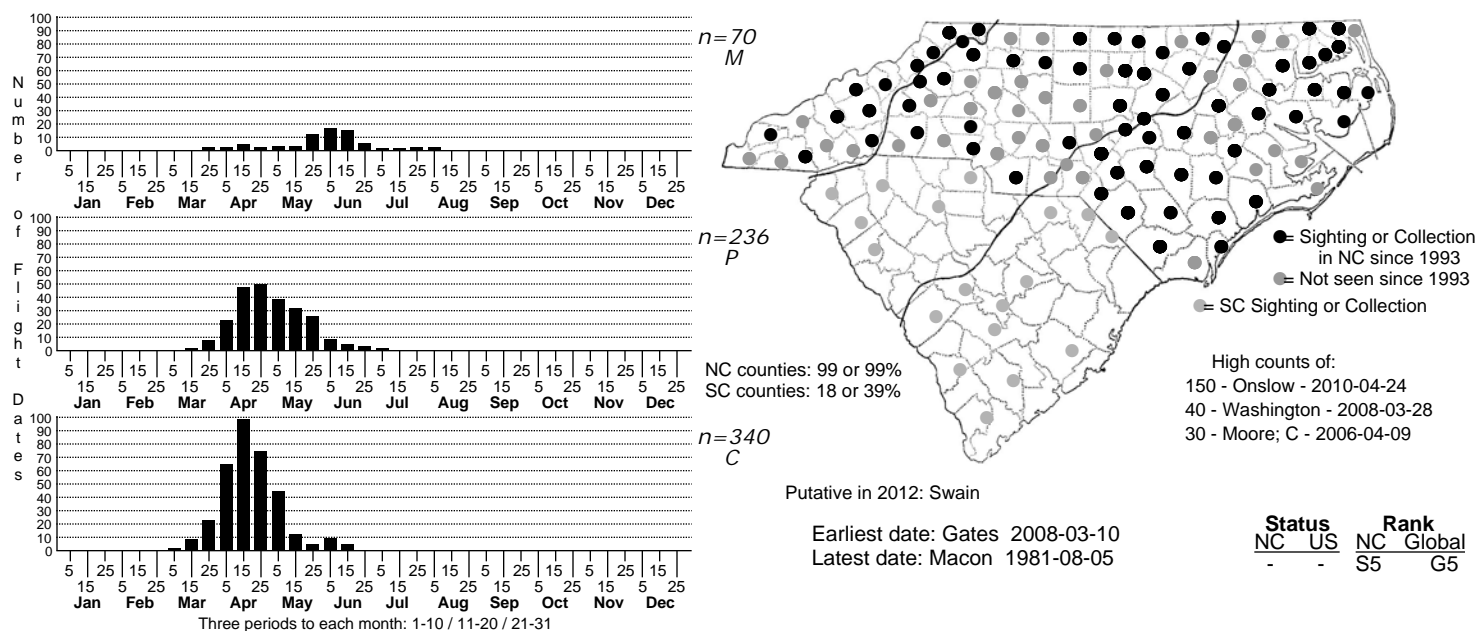
**FLIGHT:** Spring season for the most part, but sparingly into early summer. In the Coastal Plain, the flight is from late March to early July, but it is most numerous in April and May. Interestingly, Duncan Cuyler's records for the Great Dismal Swamp area are only in June, from Camden County; but his records elsewhere in NC fall between April and July (Roble and Cuyler 1998). The meager data for the Piedmont fall between early May and early July, whereas those in the mountains fall between mid-June and mid-July.

**HABITAT:** Mainly at ponds or small lakes, rarely at slow-moving rivers.

**BEHAVIOR:** Males patrol small territories around the pond margins. As with all baskettails, adults are more easily seen and studied when they are foraging or perching in an oblique manner on twigs a foot or two above ground along dirt roads and wide trails.

**COMMENTS:** Only a few individuals show the characteristic "named" dark bar on leading edge of the forewings. The species averages slightly longer than Common Baskettail, but it is best separated by the thinner abdomen that is narrowed near the thorax, giving a more spindle-shape to the abdomen. The species can easily be confused in the field with Common Baskettail, and thus observers are likely either overlooking this less common species or are reluctant to submit sight reports for it.

## *Epitheca cynosura* Common Baskettail



**DISTRIBUTION:** Statewide; undoubtedly occurs in every NC county, including those along the immediate coast.

**ABUNDANCE:** Common to occasionally abundant across the state. Often the most numerous species seen on an outing in the spring season. Dozens can sometimes be seen in a day.

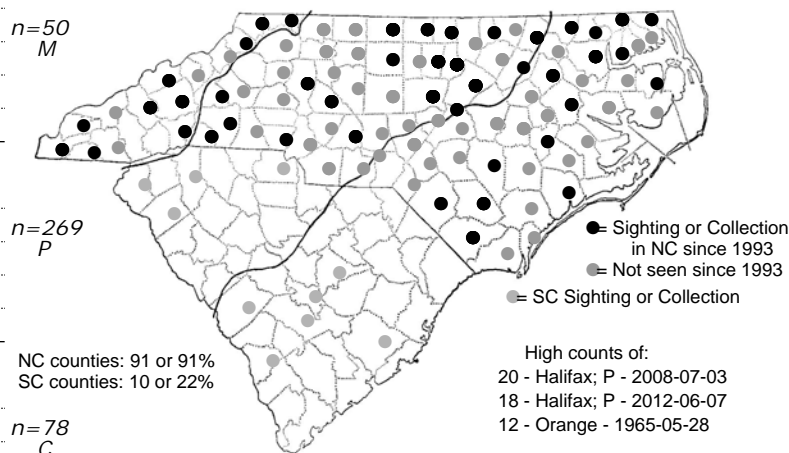
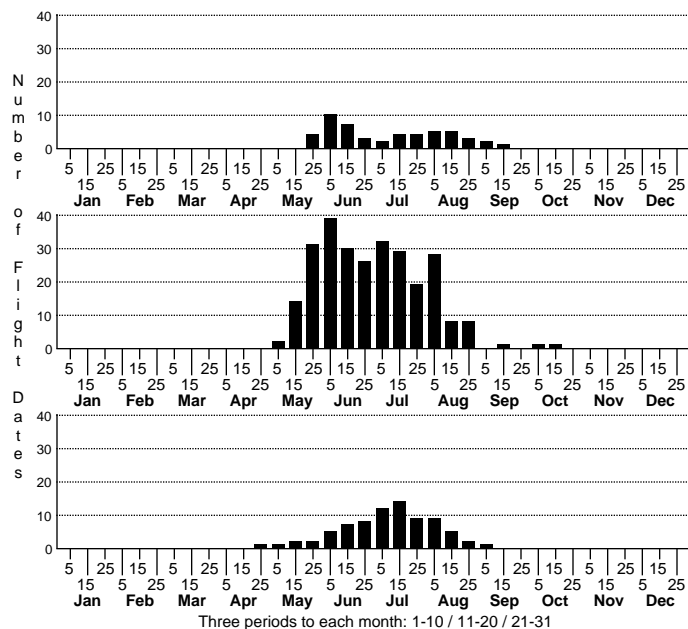
**FLIGHT:** Spring/early summer season only; mid-March to late June or early July downstate, and to early August in the mountains (where the flight begins in late March). It is infrequent downstate after the end of May.

**HABITAT:** Mainly at still or slow-moving water of ponds, lakes, and pools; rarely at slow creeks and rivers.

**BEHAVIOR:** Males are often seen flying low over pools and ponds, perching quite frequently along the margins. Away from water, adults range widely to woodland margins, sunny roads and trails, and so forth, where they perch unwarily on twigs or other low vegetation and thus can be studied closely.

**COMMENTS:** Identification of most baskettails (except Prince) can be tricky, as some Mantleds, most Slender, and especially Robust baskettails closely resemble the Common Baskettail. In fact, there is probably no single field mark that might identify a dragonfly as a Common; a suite of marks, such as abdomen shape, abdomen width, and wing coloration must be used. Nonetheless, observers will quickly tire of seeing this species in spring, in hopes of finding less numerous baskettails, darners, and skimmers.

## *Epitheca princeps* Prince Baskettail



Earliest date: Wayne 1982-04-24  
Latest date: Rowan 1978-10-11

Status	Rank
NC US	NC Global
- -	S5 G5

**DISTRIBUTION:** Statewide; presumably occurs in all 100 counties. A few coastal counties lack a record, and probably absent on the Outer Banks.

**ABUNDANCE:** Fairly common to common essentially statewide, seemingly somewhat more numerous in the Piedmont than in the mountains or Coastal Plain. Rare toward the coast, and likely absent on the Outer Banks. Does not occur in swarms like a few other baskettails (Common and Mantled).

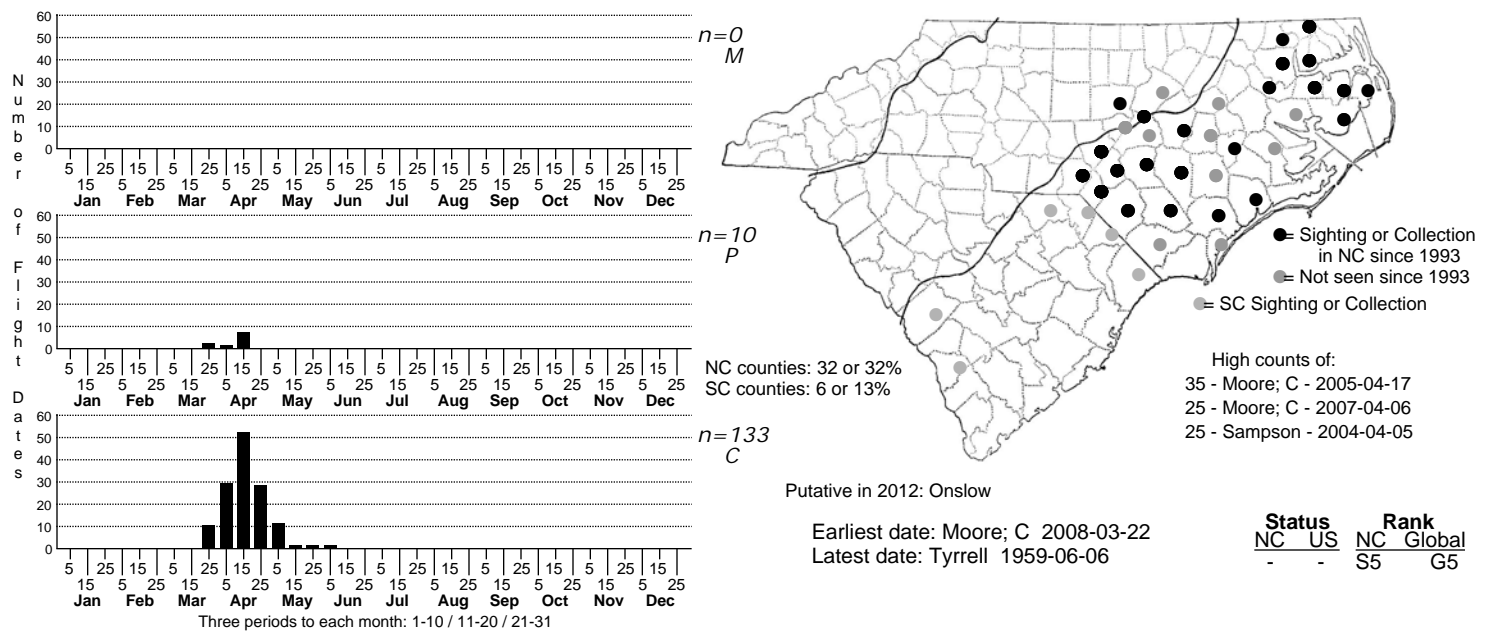
**FLIGHT:** A long flight period compared with other baskettails, and the only one that extends through the summer into early autumn. In the Coastal Plain, the flight occurs from late April to early September; in the Piedmont, from early May to mid-October (though scarce after August); and in the mountains, from late May to mid-September.

**HABITAT:** Slow-moving waters of lakes and ponds, or still rivers. Usually in open, sunny places.

**BEHAVIOR:** Males are often seen making long back-and-forth flights along canals, pond and lake shores, etc., in sunny areas well away from forests. Unlike the other baskettails, this species only infrequently perches.

**COMMENTS:** It is surprising that this species is included with the other four NC baskettails in the same genus (*Epitheca*), as the Prince Baskettail looks and behaves more like a species of damner or skimmer than a typical baskettail. The wings are boldly blotched in black, and the adults glide and fly in a choppy manner, with wings often held above the horizontal, for long periods of time. As they only infrequently perch, one normally makes the identification (easily) in flight.

## *Epitheca semiaquea* Mantled Baskettail



**DISTRIBUTION:** Essentially only the Coastal Plain in NC, though it barely extends above the Fall Line from Wake and Chatham counties southward. Ranges inland only to Wake, Chatham, Moore, and Richmond counties.

**ABUNDANCE:** Locally common to very common in the Sandhills and the adjacent southern Coastal Plain; less common farther eastward and northeastward (e.g., no record yet for Brunswick County), but still at least fairly common locally. Rare in the narrow Piedmont part of the range. Can occur in swarms, with over 20 individuals seen in a day in some sites.

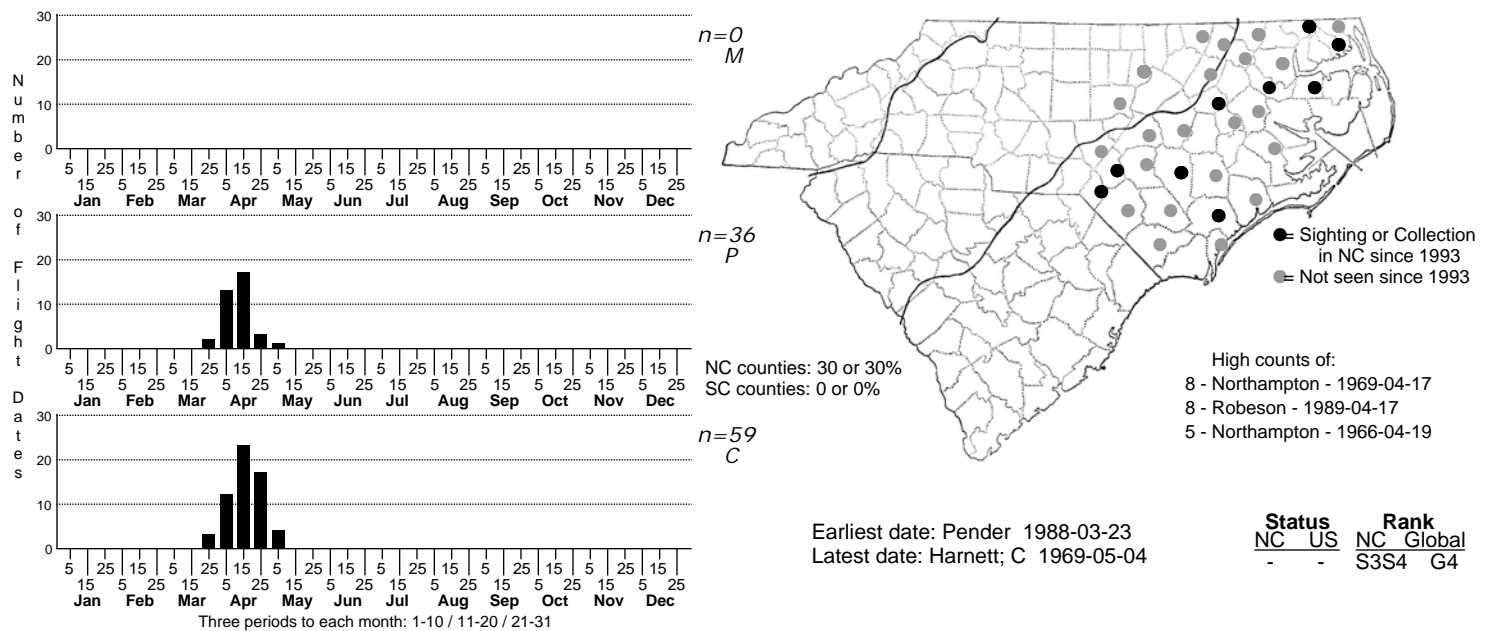
**FLIGHT:** Spring season only; late March through April, rarely to early June. The few Piedmont records end in mid-April, though it certainly flies there for a few more weeks.

**HABITAT:** Lakes, ponds, and pools. Seems to be more numerous where these are acidic, such as in pocosin habitats to include Carolina bay lakes and ponds.

**BEHAVIOR:** Males are less often seen in patrols over water than are Common Baskettails. Adults are typically seen, along with many Common Baskettails, flying along dirt roads and other clearings, frequently stopping to perch obliquely on twigs and other vegetation close to the ground.

**COMMENTS:** The amount of dark brown or black on the hindwings is somewhat variable, and many Common Baskettails also show some dark pigment on the hindwings. However, Mantleds are the smallest baskettails and can often be identified by their small size while seen on the wing.

## *Epitheca spinosa* Robust Baskettail



**DISTRIBUTION:** Occurs over most of the Coastal Plain and adjacent Piedmont, ranging inland only to Warren, Durham, Chatham, and Moore counties. Seemingly absent in the extreme eastern Coastal Plain, at least in most tidewater counties around the Albemarle and Pamlico sounds. Ranges north to New Jersey, but very rare and sporadic west of the Atlantic Coastal Plain, though there are a few records west to Oklahoma and Texas.

**ABUNDANCE:** Probably uncommon, to locally fairly common, over its range in the Coastal Plain and eastern Piedmont. Duncan Cuyler collected large numbers of this species, in several dozen counties, and thus it is not (or was not during his time) a rare species. However, most observers today are either unfamiliar with it or are reluctant to report it, due to difficulty of identification from Common Baskettail. Of note, Cuyler found it "fairly common" in the Dismal Swamp area.

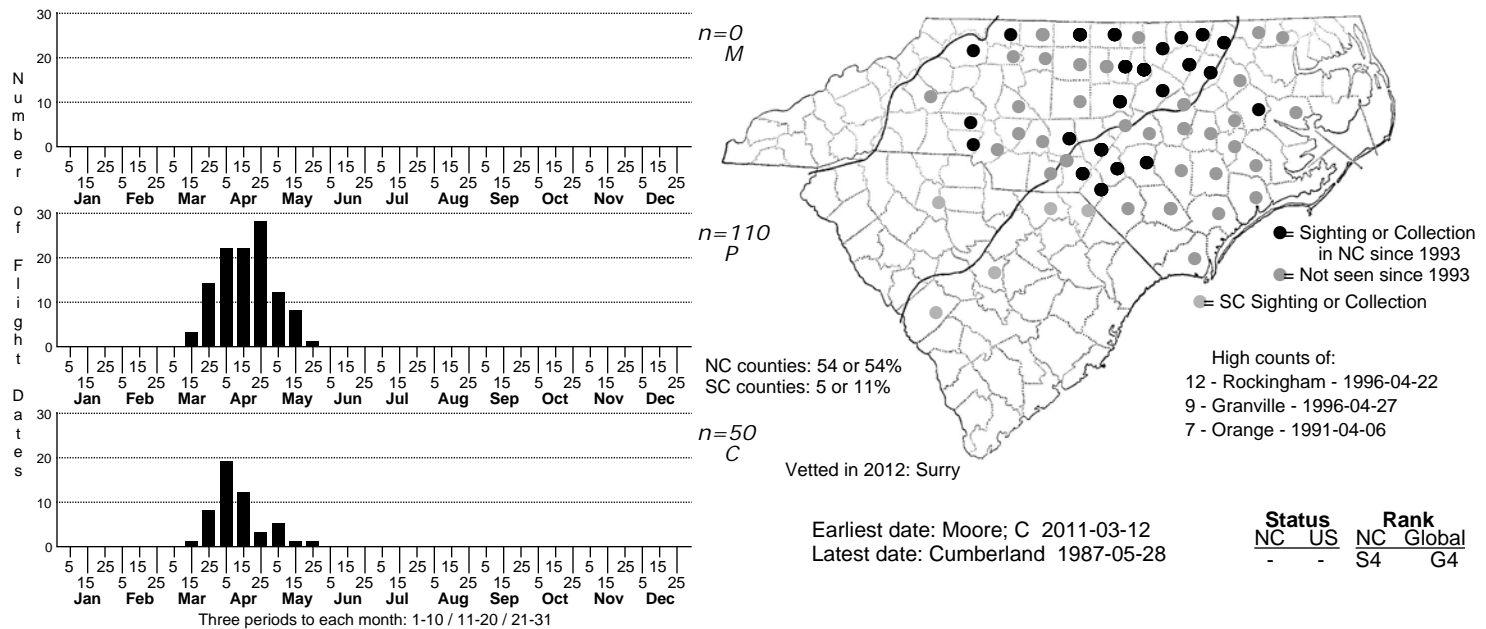
**FLIGHT:** Spring season only, with the flight finishing about as early as any dragonfly species in the state. This flight period, in both the Coastal Plain and the Piedmont, is from late March to early May, with the latest state collection record being 4 May (likely the earliest "latest" date for any odonate in NC). Not surprisingly, Dunkle (2000) says "the earliest dragonfly within its range". According to Roble and Cuyler (1998) -- "Cuyler's surveys in North Carolina indicated that this species is fairly common at ponds, swamps and streams of all sizes; adults were found from 17 April to 7 May in western Gates County ... and the Dismal Swamp region ..."

**HABITAT:** Still waters of swamps and ponds/pools in or near forests; probably scarce in open water of lakes and ponds.

**BEHAVIOR:** Males patrol along swampy edges; little else reported.

**COMMENTS:** Though the species averages slightly longer, huskier (especially in the abdomen), and more hairy in the thorax than Common Baskettail, identification of Robust Baskettail must be made with care, as there are many photos of Common Baskettails (presumably) from the mountains and Piedmont with wide abdomens and very hairy thoraxes. Even though the NC Natural Heritage Program ranks the species as S3S4 in NC, few people other than Duncan Cuyler are familiar with the species in NC. This "unfamiliarity" extends throughout its range, as Paulson (2011) says "The sparseness of records south and west of North Carolina is puzzling" and "seemingly rare in most parts of range". This suggests that most of the records rangewide are from NC, and the species is likely much more numerous here than to the north and south. As a result of learning that there are a minimum of 95 records with dates for NC (data from the University of Florida museum), the Natural Heritage Program removed the species from its Watch List in 2012.

## *Helocordulia selysii* Selys's Sundragon



**DISTRIBUTION:** Nearly throughout the Piedmont and the Coastal Plain, though apparently absent from the extreme eastern part of the latter region (no records east of Hertford and Beaufort counties). Of sporadic occurrence in the western Piedmont, possibly absent from a few of these counties. No mountain records.

**ABUNDANCE:** Uncommon to occasionally or locally fairly common in the eastern half of the Piedmont; slightly less numerous (uncommon) though widespread in most of the Coastal Plain; rare to uncommon in the western Piedmont.

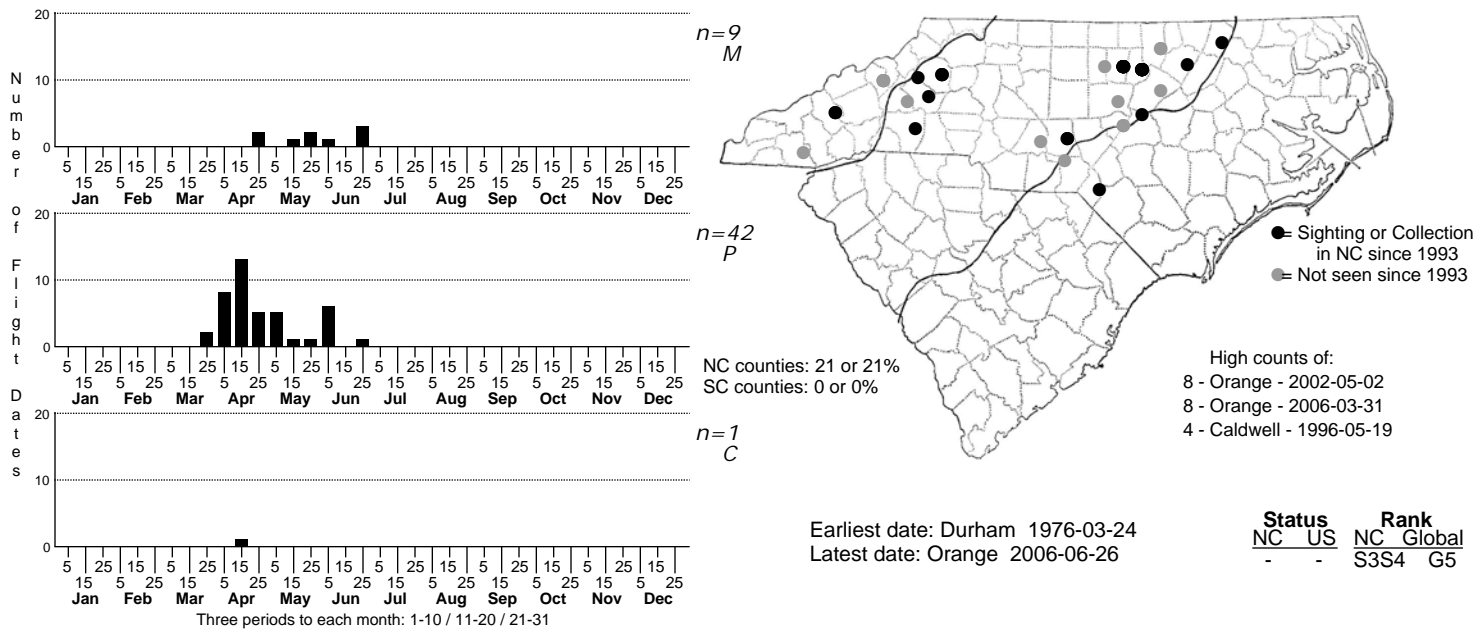
**FLIGHT:** First two-thirds of the spring season only; mid-March to late May, though scarce after early May.

**HABITAT:** Small creeks and trickles, where sandy, and typically in shaded or semi-shaded places.

**BEHAVIOR:** Behavior is similar to that of baskettails, with males patrolling small areas along creeks. However, as with baskettails, adults frequently move well away from water, feeding along dirt roads and wide, sunny trails, perching like those species in an oblique manner on twigs close to the ground. They can be somewhat unwary and studied/photographed at close range.

**COMMENTS:** As Dunkle (2000) calls the species "uncommon" over its range, and Beaton (2007) calls it "Uncommon to rare" in its GA range, the species must be more numerous in NC than in most other states in its range. Active field biologists will often find a few each spring, though it seldom occurs in numbers. At first glance the two sundragons (genus *Helocordulia*) resemble baskettails (genus *Epitheca*), but their spindle-shaped abdomen (narrowed at the anterior end) and ochre-orange band/ring on abdominal segment 3 separates the two genera.

## *Helocordulia uhleri* Uhler's Sundragon



**DISTRIBUTION:** Scattered over the mountains and Piedmont, with a gap (probably due to collecting effort) in the west-central portions of the Piedmont. Might well occur in all counties in the two provinces, as it ranges east to Halifax, Wake, Harnett, and Scotland counties.

**ABUNDANCE:** Less numerous in NC than Selys's Sundragon in most counties where both occur (i.e., the eastern Piedmont). Uncommon in the eastern third of the Piedmont, but seemingly quite rare westward, with most records in the western part of the state lying close to the Blue Ridge escarpment. The gap of records in the west-central Piedmont is bizarre and suggests that the species must be very rare there, but as there are many records from the foothills and from the eastern Piedmont, it certainly has to be present in all Piedmont counties.

**FLIGHT:** Somewhat similar to Selys's Sundragon, though occurring later into early summer. In the Piedmont, from very late March or early April to late June, but scarce after early May. Dates in the mountains fall between late April and late June, and the single Coastal Plain record is for mid-April.

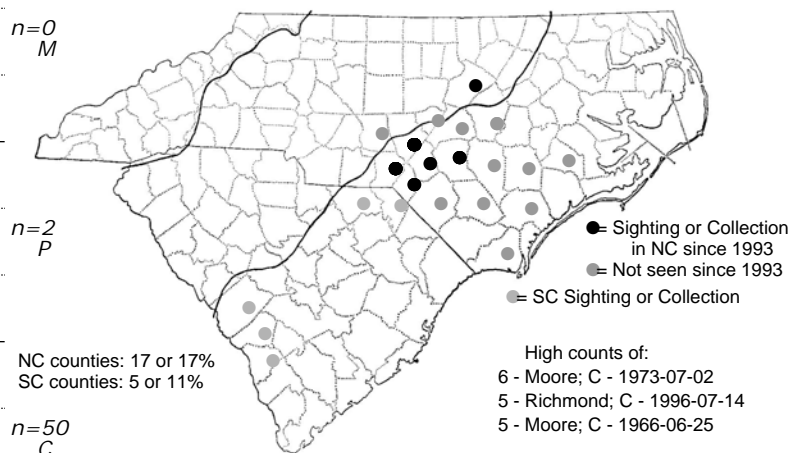
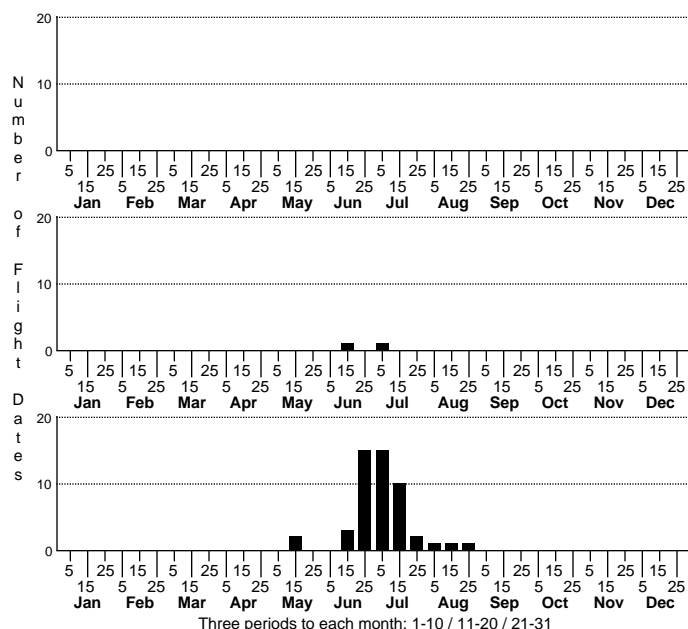
**HABITAT:** Creeks and slower-flowing rivers, in shaded or semi-shaded forested areas. Apparently in slightly larger bodies of water than for Selys's, but habitat certainly overlaps.

**BEHAVIOR:** Males patrol territories over creeks and rivers, but fly longer and faster patrols than does Selys's. Adults are like most baskettails and Selys's Sundragon in foraging well away from water along trails and roads, perching for easy observation.

**COMMENTS:** Though this species has a wider, more Northern, range than does Selys's, it is the less common of the two in NC, though active observers in the eastern Piedmont will often see one to a few Uhler's each spring. The two sundragons are quite similar in appearance, with Uhler's having a small amber spot (lacking in Selys's) at the base of each wing; these spots can be difficult to see in the field, but good, close photographs show the mark well.



# *Neurocordulia alabamensis* Alabama Shadowdragon



Earliest date: Moore; C 1963-05-18  
Latest date: Richmond; C 1997-08-22

Status		Rank	
NC	US	NC	Global
W	-	S3?	G5

**DISTRIBUTION:** Ranges across the southwestern 40-50% of the Coastal Plain, including the Sandhills region; essentially absent from the Piedmont, though there is a recent sight report from Wake County. As NC lies at the northeastern end of the range, the northern limits at present are Montgomery, Moore, Lee, Wake, Johnston, and Jones counties.

**ABUNDANCE:** Very difficult to assess for all five shadowdragons in NC because of their crepuscular habits. As it has been found in practically all potential counties in NC within its range, it must not be scarce, and the 52 records with available dates attest to it not being scarce. Dunkle (2000) calls the species "common but seldom seen" across its full range, which might apply as well to NC. Likely, it is uncommon to fairly common in the Sandhills region, and uncommon elsewhere within the range.

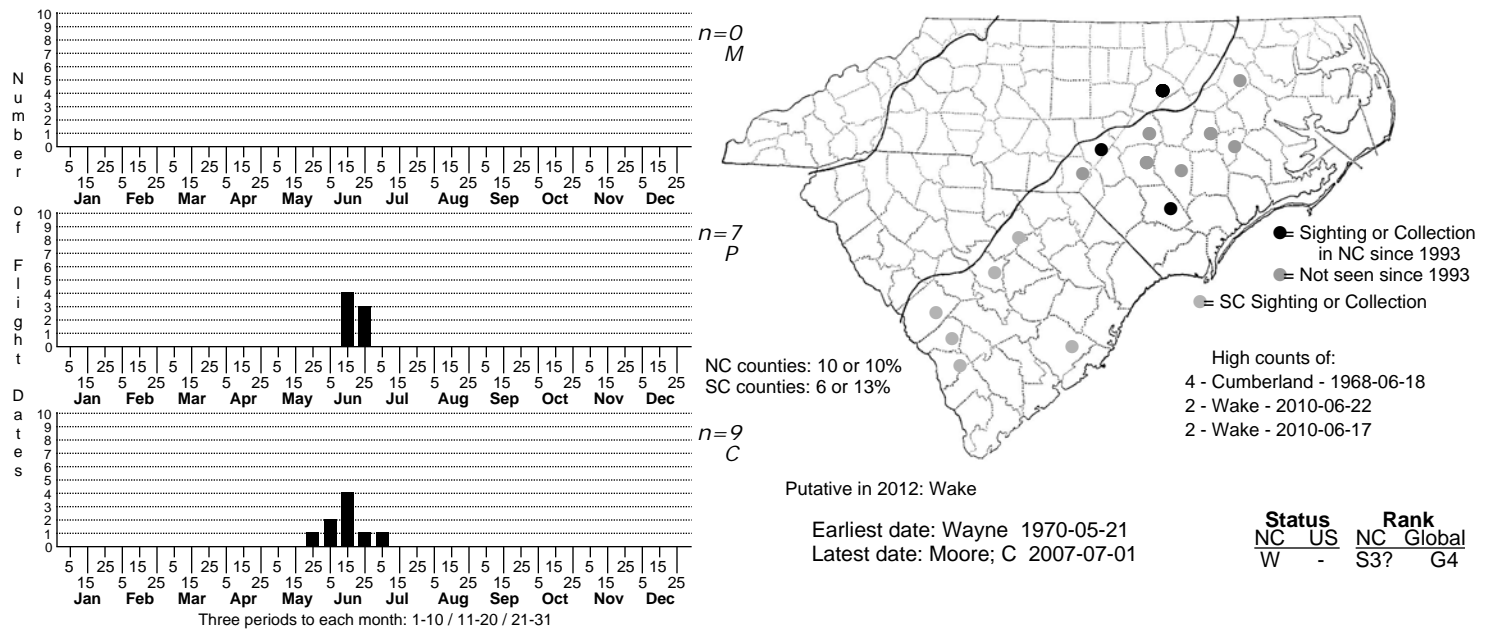
**FLIGHT:** The flight is from mid-May to late August, though most do not appear until mid-June.

**HABITAT:** Small creeks in forested regions, often where sandy and with low flow.

**BEHAVIOR:** Strictly crepuscular, with most flying taking place about 30 minutes before dusk. It spends the remainder of the day hanging on twigs in shade in forests, where very seldom seen.

**COMMENTS:** To see shadowdragons, observers must visit creeks and other bodies of water in shaded places during the last hour of daylight, with a net handy to catch whatever may be seen flying over the water. In fact, Dunkle (2000) calls this species "One of the world's most elusive dragonflies" because of its very narrow flight time during the day, often for just 10-20 minutes near dusk. Though it is not rare in the state, it is poorly known by today's biologists/observers, and the NC Natural Heritage Program retains the species on its Watch List.

***Neurocordulia molesta*** Smoky Shadowdragon



**DISTRIBUTION:** Scattered in the western half of the Coastal Plain, north to Edgecombe County; range barely extends into the adjacent Piedmont (Wake County). Range extends eastward only to Lenoir and Bladen counties. Also occurs in the Sandhills region. Though the bulk of the range lies west of the state in the Mississippi drainage, the species appears to be practically absent from the mountains and Piedmont of NC.

**ABUNDANCE:** Secretive and difficult to survey (as are all shadowdragons), but seemingly less numerous than two shadowdragons (Alabama and Umber) within its NC range. Probably rare to locally uncommon.

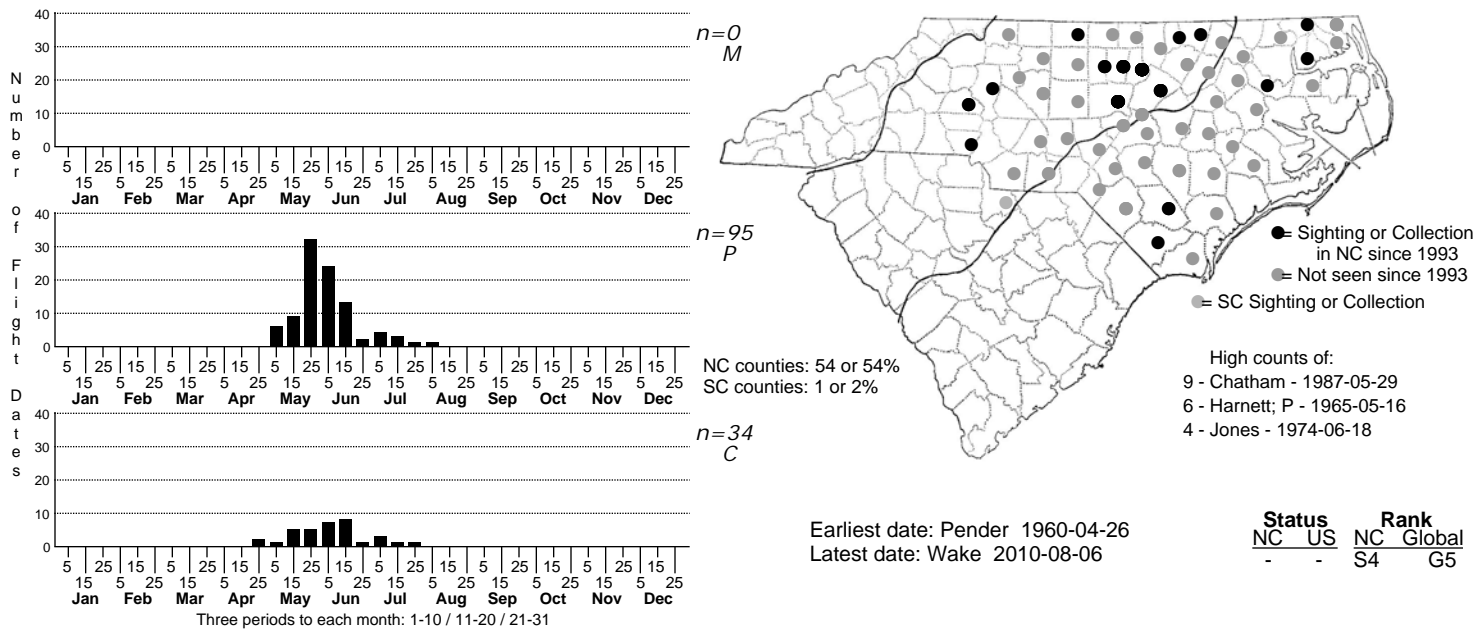
FLIGHT: Probably May into July. The only dates available fall between 21 May and 1 July. A number of records were made in Wake County in the last 20 days of June 2010.

**HABITAT:** Occurs at larger bodies of water than does Alabama Shadowdragon -- rivers and larger creeks.

**BEHAVIOR:** As with all shadowdragons, Smoky Shadowdragons remain motionless, hanging from twigs and leaves in the forest shade during the day, and fly over water for only the last hour of daylight, with most activity right at dusk.

COMMENTS: The slightly smoky color of the wings, along with olive-green eyes, separates this species from the other shadowdragons. As with the other shadowdragons in NC, one must make a concerted effort in the last hour of daylight to see this species, and a net would be essential for identification in the poor light conditions when they are flying. Though the species might not be rare in NC, there are records for just 10 counties, and thus the NC Natural Heritage Program has placed the species on its Watch List, in 2012.

## *Neurocordulia obsoleta*    UMBER Shadowdragon



**DISTRIBUTION:** Occurs over nearly all of the Piedmont and Coastal Plain, though the range is spotty near the Blue Ridge Escarpment counties and in the extreme eastern Coastal Plain, where possibly absent in a few coastal counties along the Outer Banks. No records for the mountains. The full range of the species is more northerly than most other shadowdragons, extending to Maine.

**ABUNDANCE:** Because of its crepuscular habits, abundance is poorly known, but based on the fact that it has been recorded from the majority of Piedmont and Coastal Plain counties within its range, and we have nearly 130 records with dates available, it is certainly not scarce. Likely uncommon to fairly common in much of its range in NC, though Dunkle (2000) calls it "uncommon" over its range, and Beaton (2007) calls it "probably uncommon to rare" in GA.

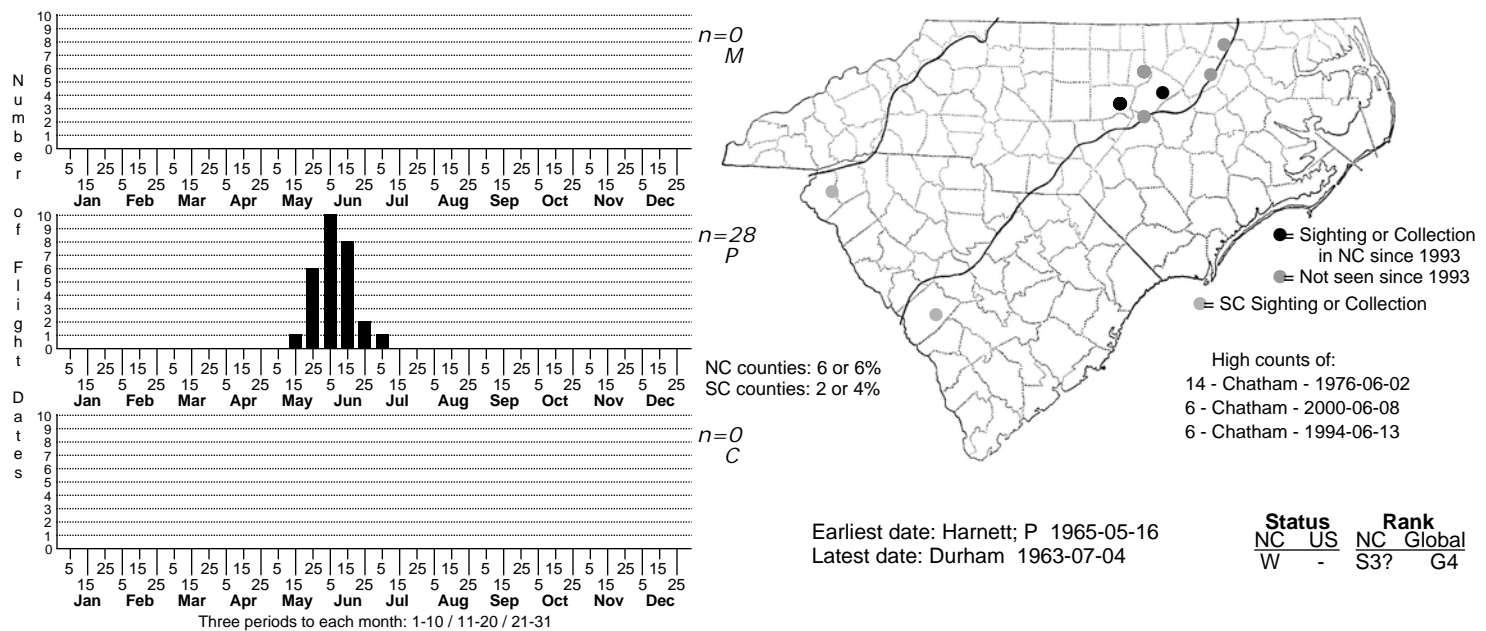
**FLIGHT:** The Coastal Plain flight is from late April to late July, whereas the Piedmont flight is slightly later -- early May to early August.

**HABITAT:** Rivers, typically large and clean; less often at creeks.

**BEHAVIOR:** As with all shadowdragons, adults hang from twigs and vegetation in the forest shade during the day, and emerge to fly only in the last hour of daylight. Males prefer to fly patrols over riffles in the rivers.

**COMMENTS:** It is surprising that such a secretive dragonfly could be recorded in NC from so many counties -- 54 in total. This is especially striking in comparison with the relatively few records from neighboring states -- 2 in GA, 2 in SC, and 10 in VA (as of 2009). This must represent intense collecting effort on the part of Duncan Cuyler or others, as it would seem unlikely to be much more numerous in NC than in VA, for example, as the range of the species is centered on these two states.

## *Neurocordulia virginiensis* Cinnamon Shadowdragon



**DISTRIBUTION:** A puzzling range in NC, so far as known, based on its "wide" overall global range. Known at present only from a handful of counties in the northeastern Piedmont -- west only to Durham and Chatham counties, and east to the Fall Line. Whether it occurs in the Coastal Plain is not certain. As this is a mostly Southern species, ranging north to southern Virginia, the lack of Coastal Plain records is striking or puzzling.

**ABUNDANCE:** Seemingly rare to uncommon (and perhaps fairly common at one or two sites) in NC, but as this and other species of shadowdragons are crepuscular, determining the range and abundance is very difficult. Oddly, Dunkle (2000) calls the species "common" in its range, but Beaton (2007) calls it "probably uncommon" in GA. The fact that at least 14 individuals were collected in a single day at a Chatham County site suggests that it might be numerous in a few places within its narrow range.

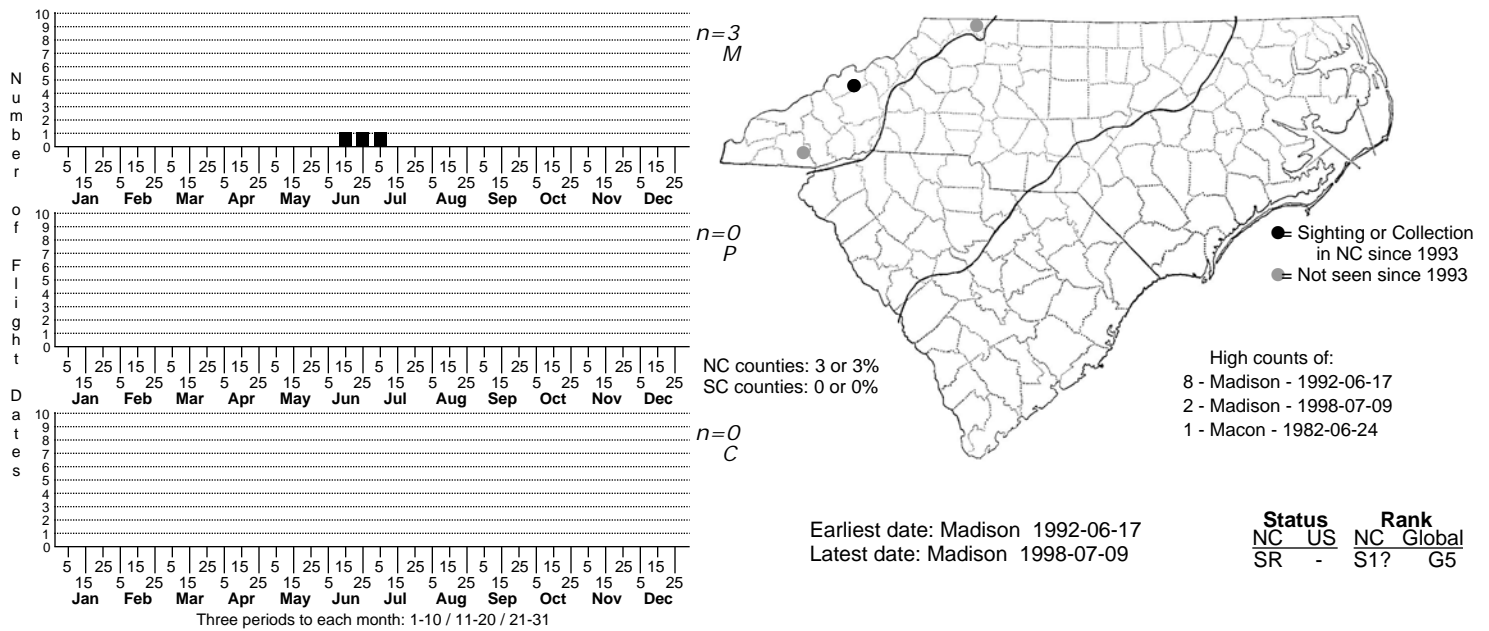
**FLIGHT:** The flight occurs from mid-May to early July.

**HABITAT:** This is a riverine species, occurring at larger, clean ones with riffles.

**BEHAVIOR:** As with other shadowdragons, adults perch inconspicuously on twigs in the shade of forests during the day, emerging during the last hour of light to forage near rivers. Beaton (2007) mentions that the species is more likely than other shadowdragons to forage away from its breeding habitat (i.e., away from water).

**COMMENTS:** Based on records from throughout its range, on the TX website, it seems that there is a FL bias in Dunkle's (2000) considering the species to be "common". That seems to be true in FL and probably AL, but there is just a single county of occurrence listed on the website for each of GA, SC, and VA, and just two for TN. Thus, the six counties known for NC is not out of line, and the Cinnamon Shadowdragon clearly is a rare to very uncommon dragonfly north of FL, and is much less numerous than the Umber Shadowdragon (which occurs with it in the NC Piedmont) north of FL. Despite there being fewer than 30 records with dates available, the NC Natural Heritage Program moved the species from the Rare List to the Watch List in 2012, as it wants more data on twilight survey efforts for shadowdragons before it considers any (other than the Stygian) to be truly rare.

# *Neurocordulia yamaskanensis* Stygian Shadowdragon



**DISTRIBUTION:** A Northern species, ranging south to the mountains of NC and TN. So far, in NC known from just three counties -- Alleghany, Madison, and Macon. The last county lies at the southern end of the range, as there are no records for northern GA.

**ABUNDANCE:** Very rare or rare, but as it is crepuscular, it might not be rare at a few specific sites; in fact, 8 individuals were collected at a single site in Madison County on 17 June 1992.

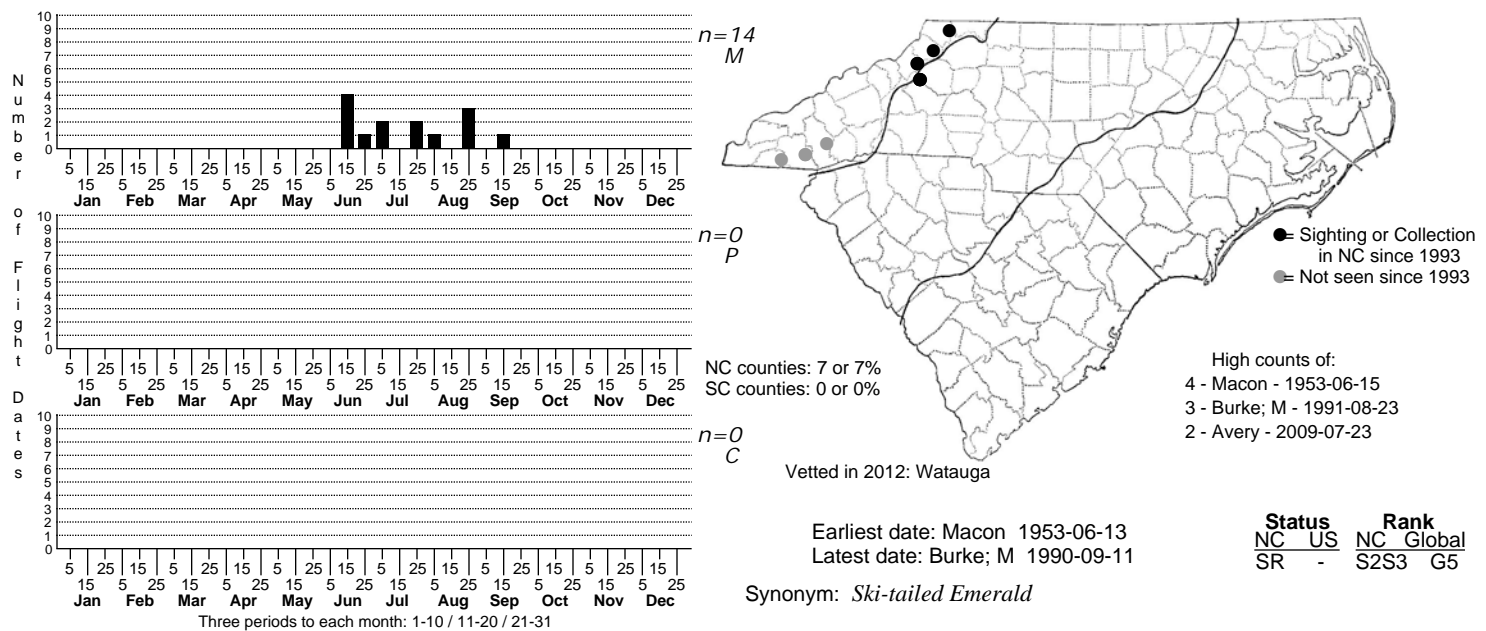
**FLIGHT:** Mid-June to at least early July, but this is based on just three records with dates.

**HABITAT:** Larger rivers and lakes, but only where there is much wave action.

**BEHAVIOR:** This shadowdragon flies even later in the day than the others, typically not flying until sunset, and continuing for another 30 minutes, often flying later on moonlit nights. During the day, all shadowdragons perch in the shade of forests on twigs and leaves, where nearly impossible to find.

**COMMENTS:** Not surprisingly, this Northern species has been recorded at just a few sites in NC, and it is the only one of the five shadowdragons in NC that occurs in the mountains. The Madison records are from the French Broad River and the Macon record is from the Little Tennessee River. We suspect that the Alleghany record is from the New River.

## *Somatochlora elongata* Ski-tipped Emerald



**DISTRIBUTION:** Strictly the mountains (and perhaps along the Blue Ridge Escarpment in Piedmont counties). Known from just seven counties in NC. The great majority of emeralds (genus *Somatochlora*) are Northern species, ranging south only to the mid-Atlantic states, and the Ski-tipped's range extends farther south than many of these, to northern GA.

**ABUNDANCE:** Rare to possibly uncommon in the northern mountains, but rare south of Avery and Burke counties. Considered to be "common" over its range by Dunkle (2000), but clearly it is a scarce species near the southern end of its range.

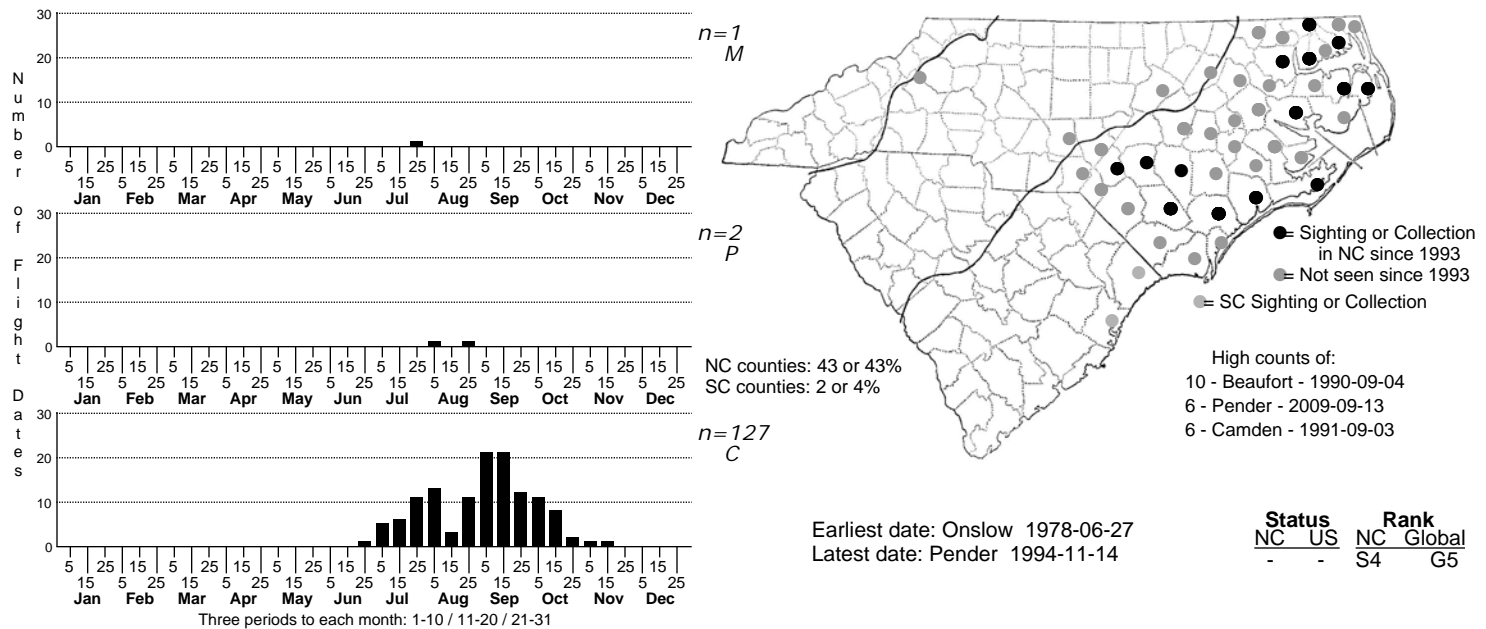
**FLIGHT:** Mid-June to mid-September.

**HABITAT:** Slow-flowing streams, outlets of lakes and ponds, beaver ponds, bogs, etc., typically in open or partly open sites.

**BEHAVIOR:** Males patrol territories over water about 1-2 feet high. However, in normal feeding, the adults often forage high, sometimes in shade.

**COMMENTS:** This is probably not an overly rare species in NC, simply because it has been found in about 1/3rd of the mountain counties, because few biologists work the mountain region for odonates, and because it is a numerous species within the main part of its range. Even so, the NC Natural Heritage Program is tracking the species as Significantly Rare, at least until more records become available.

*Somatochlora filosa* Fine-lined Emerald



**DISTRIBUTION:** Throughout the Coastal Plain, with records for nearly every county in the province, even along the coast. Occurs along the Fall Line in the extreme eastern Piedmont, and there is a collection record from far inland Burke County (mid-identified?).

**ABUNDANCE:** Fairly common and widespread in much of the Coastal Plain; probably uncommon in some areas closer to the Piedmont. It is one of the few dragonflies that is more numerous in the lower Coastal Plain than in the upper part of this province. It is very rare in the eastern Piedmont. According to Roble and Cuyler (1998), "Cuyler found that this species is common and widespread in the Coastal Plain of North Carolina, including the Dismal Swamp area."

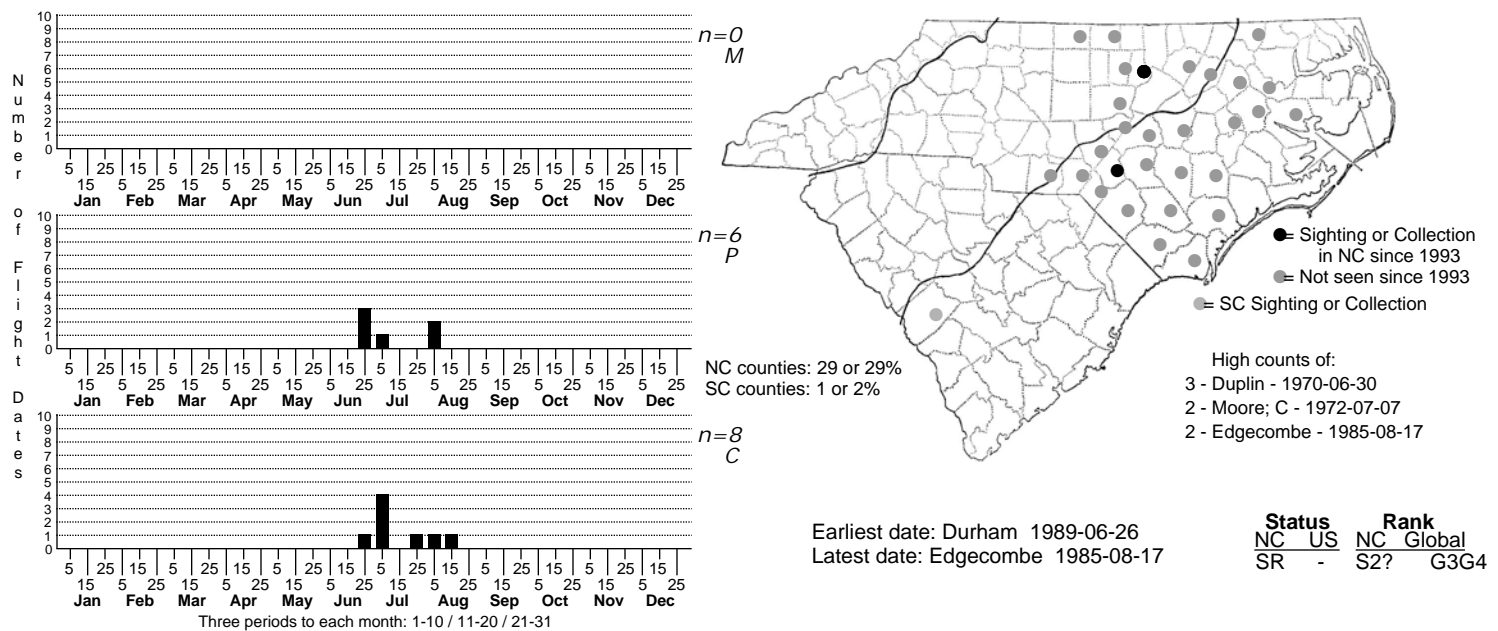
**FLIGHT:** Late June to mid-November, being one of the few dragonflies whose main flight is the fall season, where it often peaks in September or even into October. Interestingly, the three records from the Piedmont/foothills are from late July to late August, and not in the fall season at all.

**HABITAT:** Both Dunkle (2000) and Beaton (2007) indicate that the breeding habitat is unknown, but suggest swamps, seeps, and other slow-moving waters in forested areas. This seems correct for NC, as it is often found near forested, swampy habitats, as opposed to flowing waters of riverine/creekside habitats or wide open waters of lakes and ponds.

**BEHAVIOR:** As with most emeralds, adults forage widely away from water, such as along forest edges and along roads and wide trails. They may fly high (over 10-20 feet), but they can be observed as they perch on a twig, often within a few feet of the ground.

COMMENTS: This species can be numerous in the fall season near swampy woodlands and forested margins near wetlands, though finding one perched within easy viewing or photographing can be a challenge. The "fine lines" on the side of the thorax, which give the species its common name, are not easily seen. Most other emeralds have more distinct thorax stripes/lines, whereas the numerous Mocha Emerald is solid-colored on the sides of the thorax.

## *Somatochlora georgiana* Coppery Emerald



**DISTRIBUTION:** Present over the eastern Piedmont and western 2/3rds of the Coastal Plain. Ranges west to Rockingham and Anson counties; and east to Northampton, Beaufort, and Pender counties. It seems to be absent in the far eastern counties, as well as in the western half of the Piedmont and the mountains.

**ABUNDANCE:** Puzzling. Most references consider this to be a rare species, yet the great number of counties recorded in NC suggest otherwise. Few biologists in NC seem to be familiar with the species, as there are no photos on websites and no recent observations. It has been recorded in 29 NC counties, but just one in VA, one in SC, and two in GA. And, specimens from Duncan Cuyler and others at the University of Florida yield only 14 date records. Where all of the other records? Perhaps the species has also declined in recent decades, as a species this "widespread" and not overly difficult to identify should certainly have been found in the last 20 years. Despite what the map shows, this is clearly a rare species in NC today.

**FLIGHT:** The NC flight occurs between late June and mid-August.

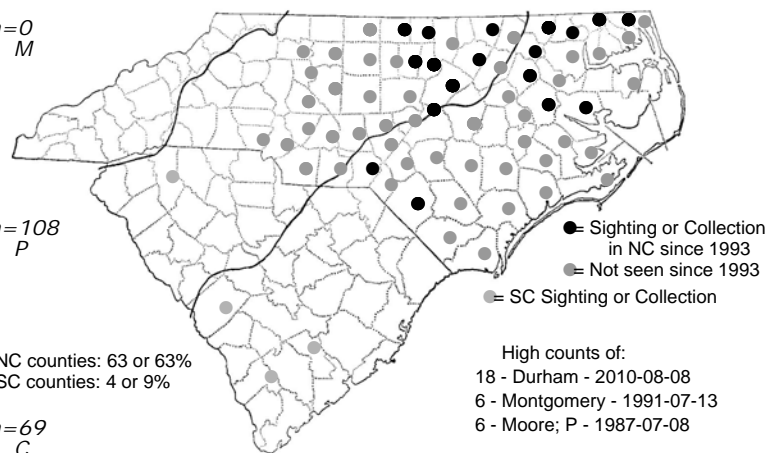
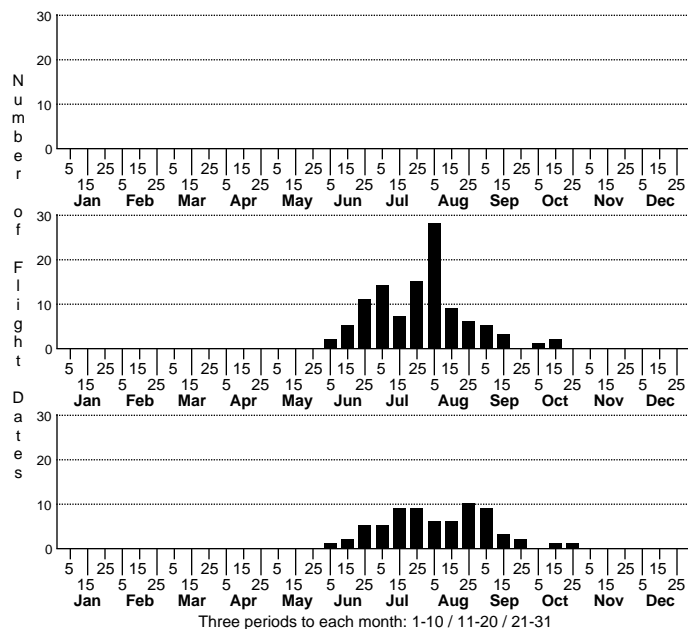
**HABITAT:** Creeks and other slow-moving acidic streams, in forested areas.

**BEHAVIOR:** Adults are somewhat secretive. They are most frequently seen flying 30 or more feet above ground, in late afternoon. They perch on twigs, but often well above ground. Males can sometimes be seen patrolling over streams.

**COMMENTS:** Exactly why there are so many more records for NC than in practically any other state -- just about half of all county records known are from NC (!) -- is not known. Despite it being colored like no other dragonfly, and should be obvious when seen, it is clearly not often encountered except with a purposeful search (such as near dusk), or with long nets to catch high-flying dragonflies. Because there have been no recent records, the NC Natural Heritage Program has moved the species from its Watch List to the Rare List in 2012. We agree with Paulson (2011): "This is one of our rarest dragonflies, very seldom encountered in most of its range."



## *Somatochlora linearis* Mocha Emerald



Earliest date: Orange 1960-06-02  
Latest date: Camden 2009-10-22

Status		Rank	
NC	US	NC	Global
-	-	S5	G5

**DISTRIBUTION:** Throughout the Coastal Plain (even near the coast), and the eastern and central Piedmont. Ranges west to Yadkin and Gaston counties. Not known yet from the mountains, despite range maps in reference books that shade in the entire eastern US.

**ABUNDANCE:** Uncommon to fairly common over much of the Coastal Plain and eastern third of the Piedmont, but uncommon in the central Piedmont. Perhaps uncommon also in the southeastern part of the Coastal Plain. This is generally the most numerous emerald in the Piedmont, and is the most numerous emerald in the Coastal Plain during the summer.

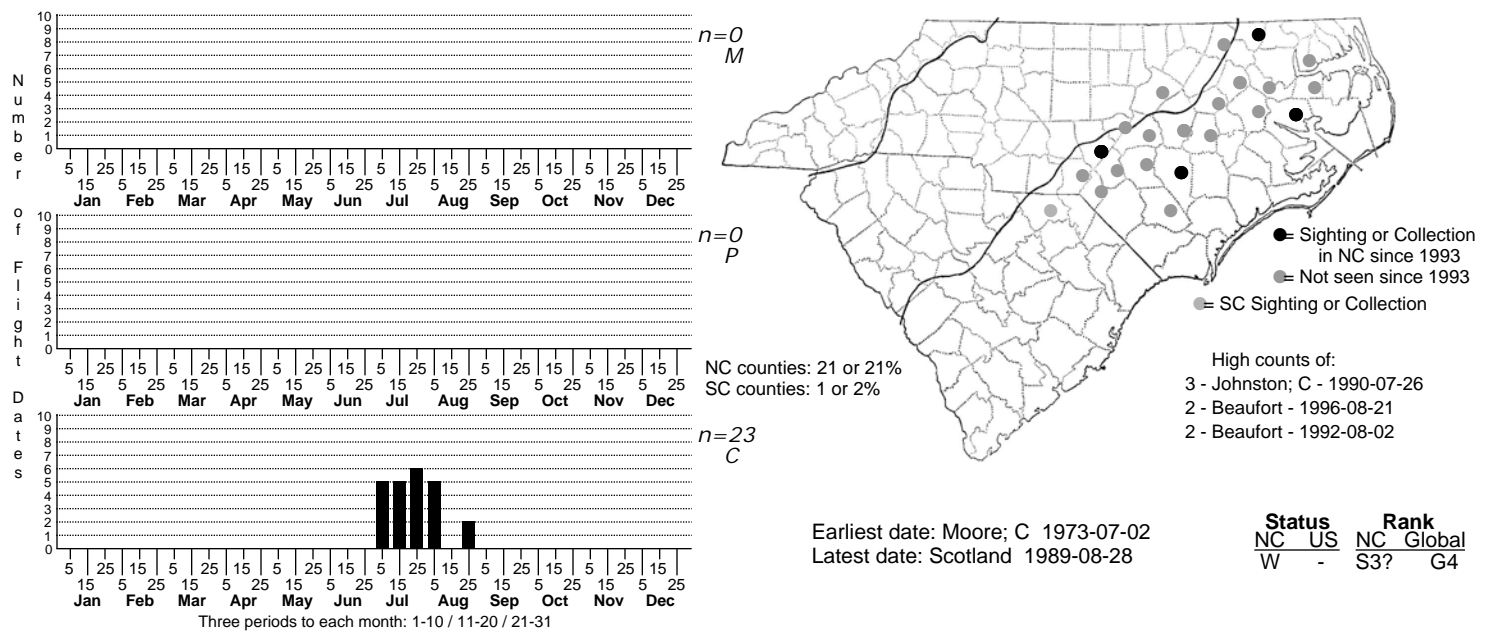
**FLIGHT:** Summer and early fall seasons, from early June into late September, and sparingly to mid-October. Not numerous after August.

**HABITAT:** Small forested streams; Dunkle (2000) says streams about 1-3 yards wide are preferred.

**BEHAVIOR:** The species is most easily seen near small streams that are drying up. Away from streams, this emerald is often seen flying along wooded roads and wide trails, often at head height, back and forth, pausing to hover close to an observer. They spend most of the day perched in shady places, often hidden from an observer.

**COMMENTS:** Emeralds are usually seen in flight along and over forested roads, often at treetop height, and sometimes perching on telephone wires. They seem curious and may hover close to an observer, when the adult's bright green eyes and black thorax and abdomen are noticed. However, identification can be tricky in flight, and normally identification must be made of perched or netted individuals.

## *Somatochlora provocans* Treetop Emerald



**DISTRIBUTION:** Strictly in the western and central Coastal Plain, though possibly in the extreme eastern Piedmont (along the Fall Line). Ranges east only to Chowan, Washington, Beaufort, and Bladen counties; and west to Wake, Lee, Moore, and Richmond counties.

**ABUNDANCE:** Difficult to assess because of its high-flying habits. All references consider it to be a scarce, though not necessarily rare, species. Based on the fact that it has been recorded in NC from 21 counties, it certainly isn't overly rare. Best considered as uncommon and very easily overlooked, within its narrow range in the state.

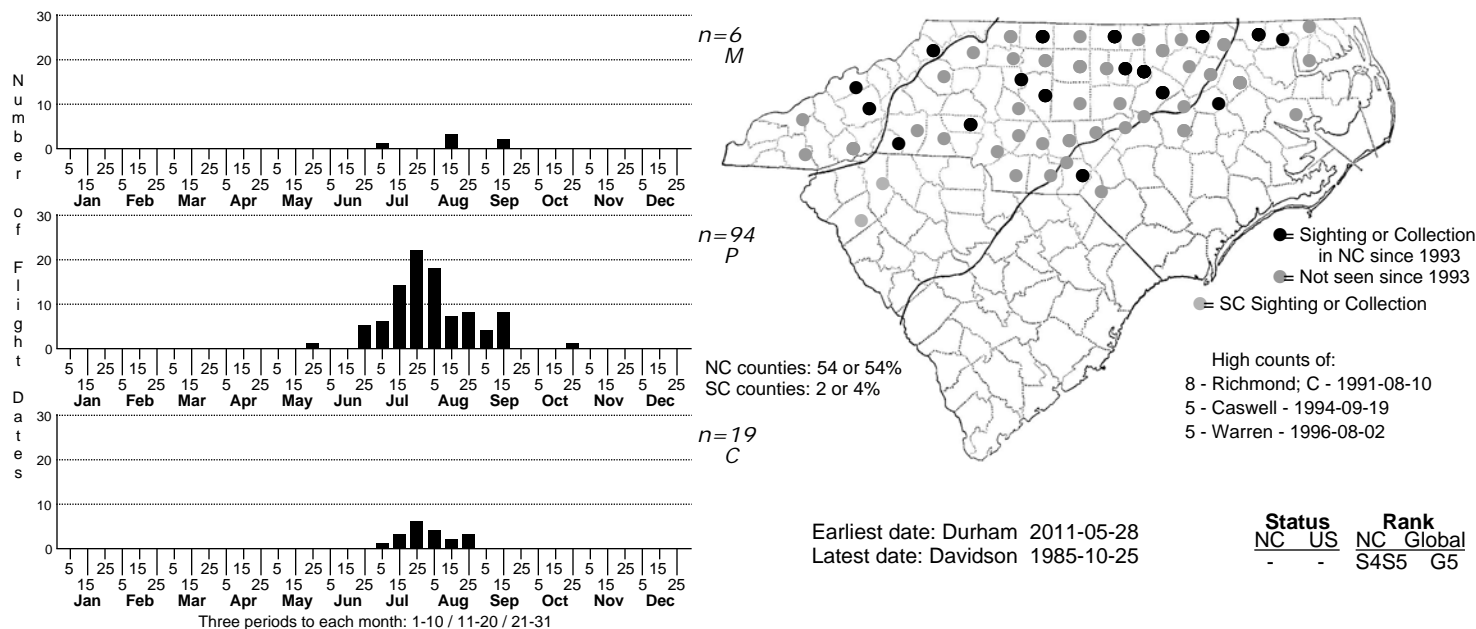
**FLIGHT:** The flight seems quite narrow in time, considering that we have 23 flight dates. So far, recorded only between early July and late August.

**HABITAT:** Small forested seeps and pools, perhaps very small streams.

**BEHAVIOR:** As the common name implies, this emerald is normally seen in flight, typically over head-height to treetop height, along and over forested roads and clearings. Adults normally perch high on twigs of canopy trees.

**COMMENTS:** This species is most likely one in which a net is required to verify records. An observer may often see high-flying dragonflies during the summer months along forested roads, especially near swamps and other wetlands. Perhaps a moderate number of these (at least in the Coastal Plain) are Treetop Emeralds, but this is only speculation. Getting a good photograph of a Treetop Emerald in a natural pose requires either much luck, much patience, or a strong telephoto lens!

## *Somatochlora tenebrosa* Clamp-tipped Emerald



**DISTRIBUTION:** Present over most of the mountains, throughout the Piedmont, and in the northern Coastal Plain. Seemingly absent from the southern Coastal Plain counties, except in the Sandhills region; no records east of Gates, Beaufort, Harnett, and Scotland counties. Probably occurs in all mountain counties, but recorded so far only in roughly one-third of the counties in that province.

**ABUNDANCE:** Generally uncommon but widespread in the Piedmont, somewhat less numerous than the Mocha Emerald. Rare to uncommon in the northern Coastal Plain, but rare in the mountains.

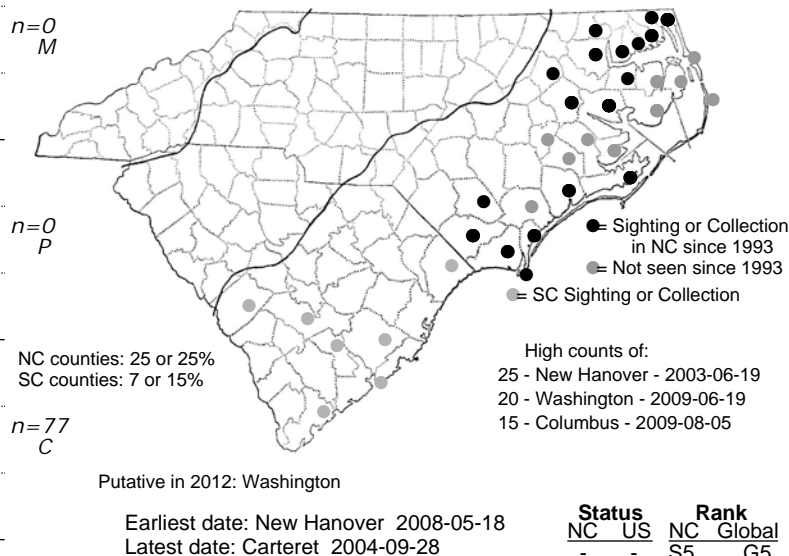
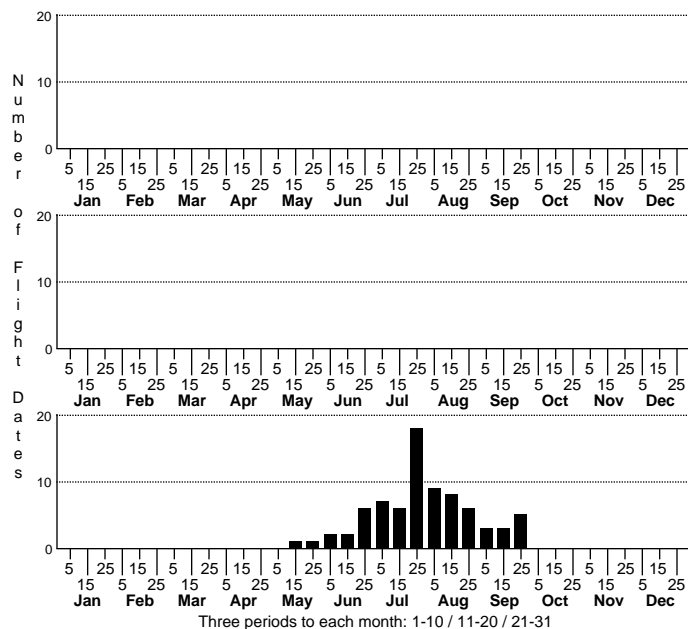
**FLIGHT:** Primarily the summer season, to early fall; generally from late June or early July to mid-September.

**HABITAT:** As with other emeralds, it breeds in small forested wetlands, such as small streams and seeps.

**BEHAVIOR:** Males may be seen flying patrols over the small streams, more easily noticed when the streams are becoming dry. Adults typically forage away from water along wooded roads, edges, and small clearings. They perch on twigs in the shade, often higher than does the Mocha Emerald.

**COMMENTS:** The male cerci are indeed "clamp-like" when seen from the side, rendering identification somewhat easy when seen well. Also, this species has stripes on the sides of the thorax, whereas Mocha is nearly devoid of such markings. Clamp-tipped and Mocha are the only emeralds normally seen in the Piedmont; even so, because emeralds perch in the shade, often not in conspicuous places, many persons have trouble becoming familiar with this group of dragonflies (even though members of the genus are collectively numerous in much of NC).

## *Brachymesia gravida* Four-spotted Pennant



**DISTRIBUTION:** The lower half of the Coastal Plain only, inland to Hertford, Edgecombe, Lenoir, Bladen, and Columbus counties. This is one of just 3-4 "coastal only" dragonflies in NC (along with Seaside Dragonlet, Needham's Skimmer, and Marl Pennant).

**ABUNDANCE:** Common close to tidal/brackish waters; much less common -- rare to uncommon -- in areas well away (several dozen miles) from tidal waters.

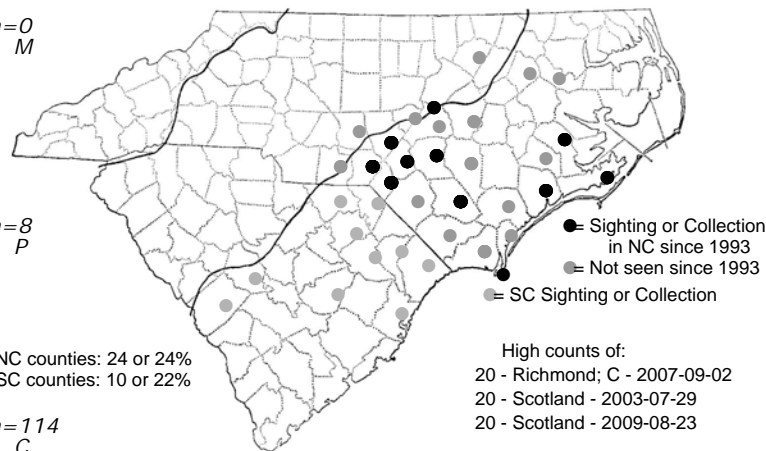
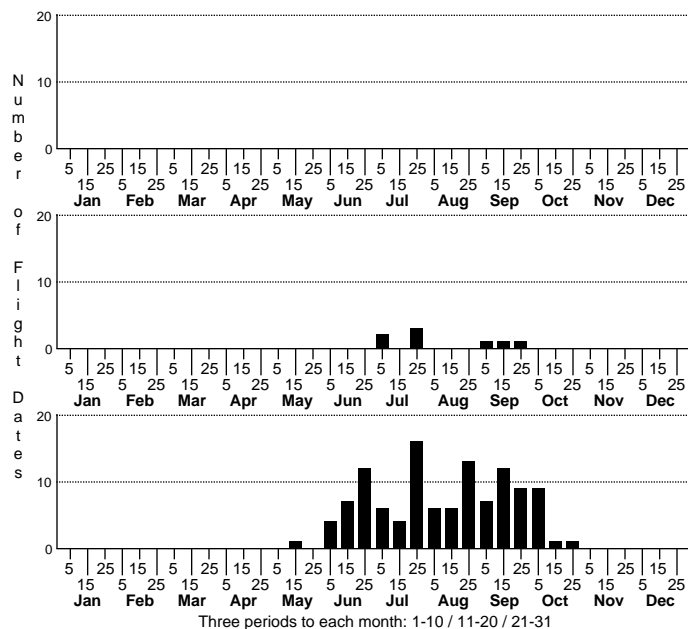
**FLIGHT:** A wide flight period during the warmer months, ranging from mid-May to late September.

**HABITAT:** This is one of the few dragonflies in the East that favors brackish water for breeding; habitats include brackish lakes, ponds, and ditches, but also still fresh water habitats also.

**BEHAVIOR:** Adults are often seen in some numbers flying along ponds and ditches, frequently perching on twigs and vegetation in easy view of the observer.

**COMMENTS:** The white stigmas are very conspicuous and identify these dragonflies, even if the single large dark patch near the node on each wing isn't seen at first glance. Adults often obelisk. Thus, its behavior, unique markings, and occurrence in open habitats render it easy to identify and one of the favorites among odonate watchers.

# *Celithemis amanda* Amanda's Pennant



Earliest date: Moore; C 2010-05-15  
Latest date: Craven 2011-10-28

Status	Rank
NC US	NC Global
- -	S5 G5

**DISTRIBUTION:** The southern 2/3rds of the Coastal Plain and extreme eastern Piedmont, ranging sporadically north to Franklin (Piedmont), Edgecombe, and Martin counties. Of widespread occurrence in the Sandhills and southern 35-40% of the Coastal Plain. NC lies at the northern end of the species' range.

**ABUNDANCE:** Common in the Sandhills and southern/southeastern Coastal Plain counties, especially where pocosins, savannas, limesink ponds, and other non-riverine waters are present. Rare to uncommon north of Johnston and Craven counties, and rare in the narrow portion of the range into the Piedmont.

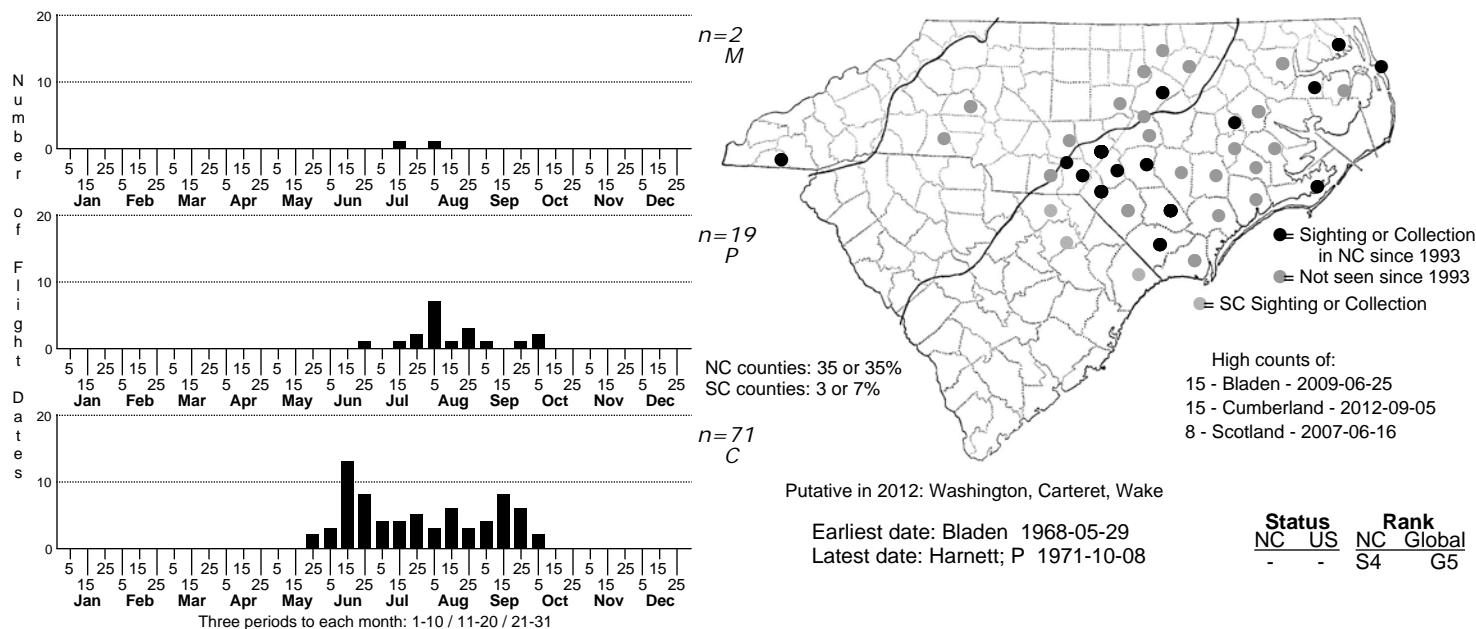
**FLIGHT:** Mainly in summer and early fall; early June (rarely as early as mid-May) into early October, rarely to late October.

**HABITAT:** Breeds in pools, ponds, and lakes, where well vegetated.

**BEHAVIOR:** This species, as do most other pennants, perches on twigs and vegetation fairly low to the ground. Adults often forage well away from ponds, such as in savannas and flatwoods.

**COMMENTS:** This is one of the most often encountered dragonflies in late summer when one is walking in savannas, flatwoods, pocosin margins, and the vicinity of limesink ponds, in high quality natural areas such as found in Croatan National Forest, Holly Shelter Game Land, and the Sandhills Game Land. It, along with the Halloween Pennant, seems to forage farther away from water than do the other *Celithemis* pennants in NC.

## *Celithemis bertha* Red-veined Pennant



**DISTRIBUTION:** Scattered over nearly all of the Coastal Plain and eastern Piedmont; a few records for the southwestern Piedmont (Catawba and Cleveland counties), plus an outlier in the southwestern mountains (Clay County). Found primarily in the southern half of the Coastal Plain (sporadic north of Harnett and Pitt counties). NC lies at the northern edge of the species' range; it has not yet been found in Virginia (according to Odonata Central), though it occurs in NC border counties.

**ABUNDANCE:** Uncommon, to locally fairly common, in the southern half of the Coastal Plain; rare in the northern half of the Coastal Plain and the extreme eastern Piedmont; very rare farther west.

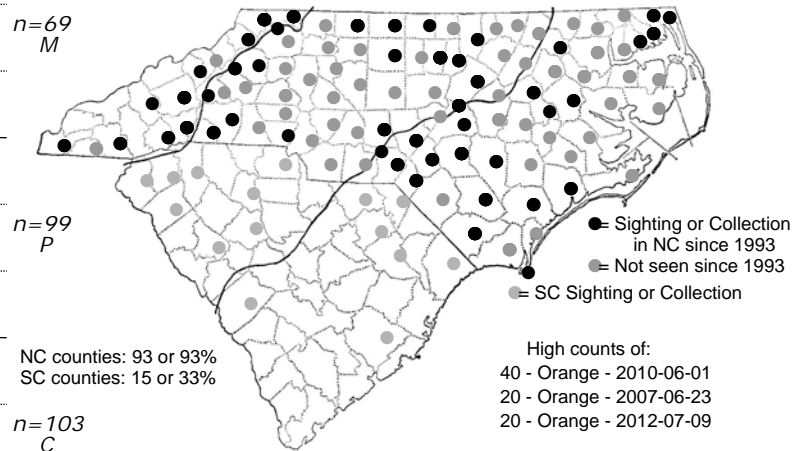
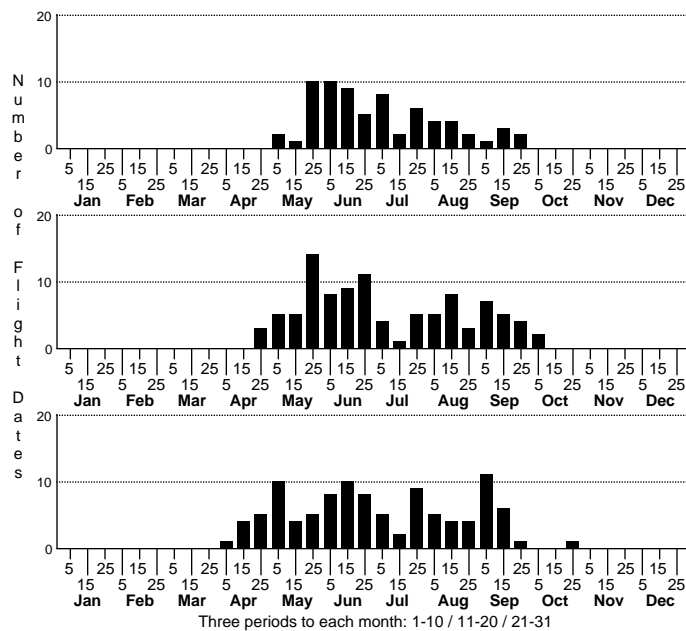
**FLIGHT:** In the Coastal Plain, the flight occurs from late May to early October; however, the earliest record for the Piedmont isn't until late June. The two mountain records with dates are for mid-July and early August.

**HABITAT:** Primarily at ponds and lakes with much emergent vegetation along the shore.

**BEHAVIOR:** Unlike most other *Celithemis* pennants, adults seldom stray far from ponds or small lakes, and may forage well out in the water and perch on logs and other material emerging from the water.

**COMMENTS:** Though a common species, apparently, in FL (Dunkle 2000), it is not common northward. Beaton (2007) calls it "Uncommon below the Fall Line" in GA, and as NC lies at the northern edge of the species' range, it is no more numerous here (unlike the Amanda's Pennant, which is more common in NC than in GA). Despite it having been found in roughly one-third of the counties in NC, including all in the southern Coastal Plain, it and the Double-ringed Pennant are the only ones (of seven species) in the genus that are not common (at least locally) in the state. It is most likely to be seen by working the margins of beaver ponds and man-made ponds in the Sandhills region.

## *Celithemis elisa* Calico Pennant



Earliest date: Brunswick 1990-04-10  
Latest date: Bladen 1981-10-28

Status	Rank
NC US	NC Global
- -	S5 G5

**DISTRIBUTION:** Statewide, but of spotty distribution in parts of the mountains (though likely occurring in all counties).

**ABUNDANCE:** Fairly common to common, and widespread, essentially throughout, but less numerous in the middle and higher elevations in the mountains.

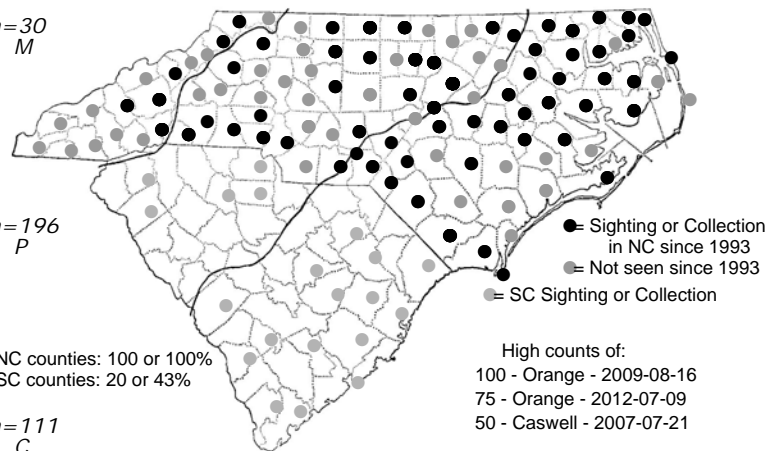
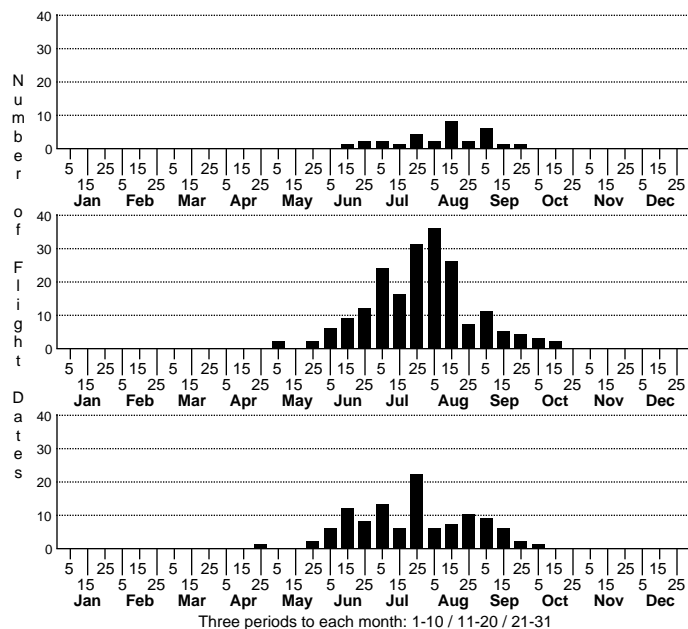
**FLIGHT:** Most of the flight season for dragonflies (except for early spring); downstate, generally from mid-April to early October. The flight in the mountains begins in early May and extends to late September.

**HABITAT:** As with other *Celithemis*, it breeds at ponds and smaller lakes, typically with much vegetation along the shoreline. It occasionally breeds at slow creeks and rivers.

**BEHAVIOR:** Adults fly at ponds and perch on twigs and vegetation around pond margins. They also forage well away from water, preferring open habitats such as fields (rather than open woods and wooded margins). They are unwary when perching, as are most other pennants.

**COMMENTS:** This is one of the more colorful of the dragonflies, and adult males are quite stunning with their red and black abdomens and numerous burgundy/blood-red wing patches. Females and immatures, though highly patterned, could be confused with Halloween Pennants. Thankfully, because it occurs statewide and in open habitats, and it flies for many months of the year, it is one of the dragonflies that beginners should be able to observe and learn.

## *Celithemis eponina* Halloween Pennant



Earliest date: Gates 2005-04-23  
Latest date: Cabarrus 1973-10-16

Status	Rank
NC US	NC Global
- -	S5 G5

**DISTRIBUTION:** Statewide. This is one of the very few species with records for all 100 counties.

**ABUNDANCE:** Common over the Piedmont and Coastal Plain, and fairly common (at best) in the mountains. Though it is not normally seen in swarms, we have several one-day counts of 50 or more individuals. The abundance across the state is relatively low until July or August, and it is often missed on late spring and early summer field trips.

**FLIGHT:** An extended flight season, covering most of the warmer months -- very late April or early May to mid-October downstate, and from mid-June (if not earlier) to late September in the mountains.

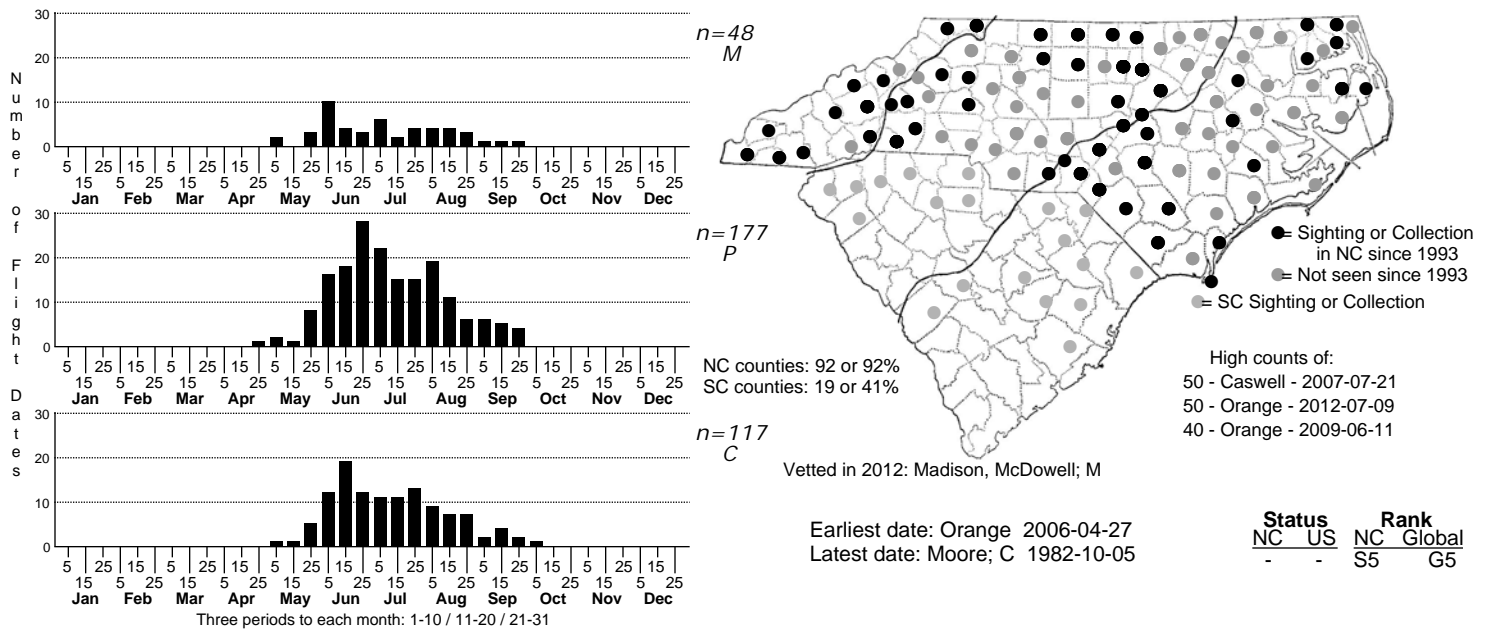
**HABITAT:** Breeds at ponds and lakes, and sometimes at marshes.

**BEHAVIOR:** This *Celithemis* pennant forages farther away from water than all others, and is actually not often seen at breeding waters. They are characteristically seen perching on the tips of blades of grasses or tall herbs in a field or powerline clearing, usually well removed from forested areas.

**COMMENTS:** In many respects, this is the most atypical of the *Celithemis* pennants. It often resembles a butterfly or moth in flight because the wings are heavily suffused with amber or ochre coloration so as to appear almost opaque. The many dark bands on the wings also might fool an observer into thinking the odonate is a butterfly or moth. It seems to "enjoy" flying in windy weather, with choppy wing beats. As with the Calico Pennant, this species should be easily seen and learned by beginners.



## *Celithemis fasciata* Banded Pennant



**DISTRIBUTION:** Essentially statewide, though of spotty occurrence in the mountains. Likely occurs in all 100 counties, though not recorded in four such counties.

**ABUNDANCE:** Fairly common to often common in the Coastal Plain and Piedmont; fairly common in most of the mountains, but certainly rare or absent at higher elevations.

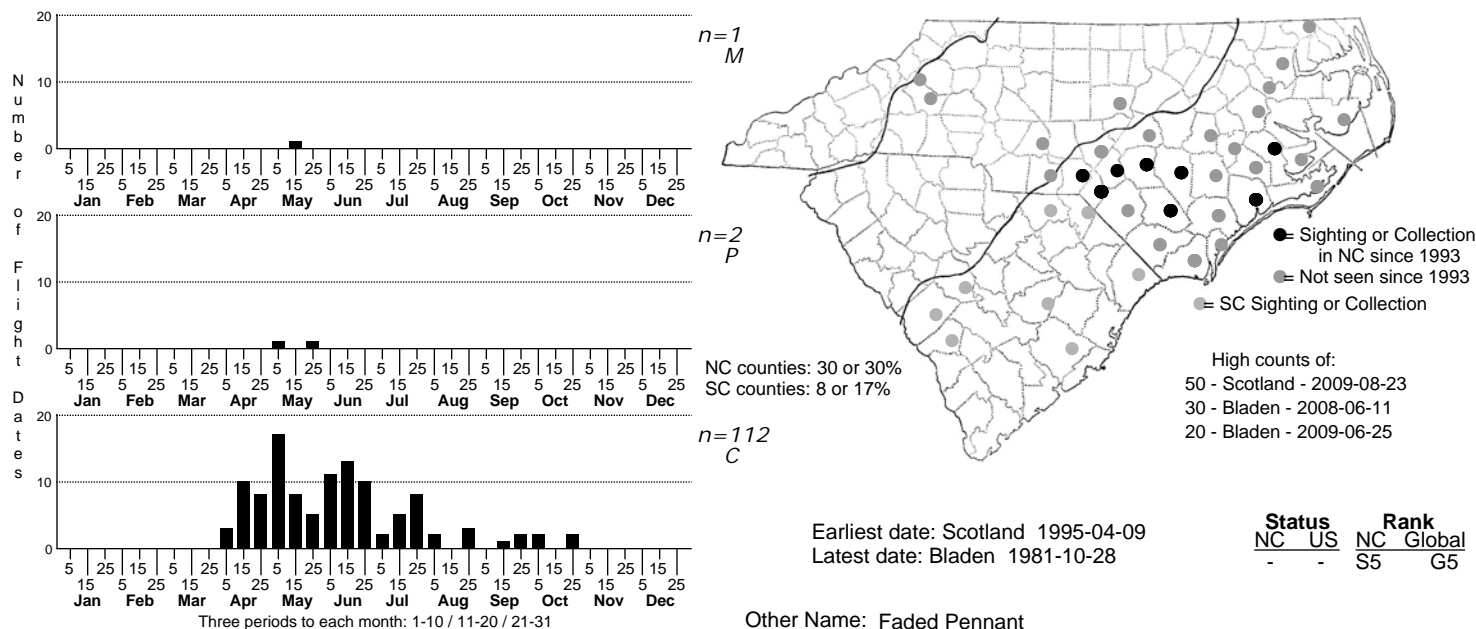
**FLIGHT:** Most of the flight season -- late April to late September, rarely to early October. The mountain flight is barely shorter.

**HABITAT:** As with other pennants, it breeds at ponds and lakes, typically ones that are fairly open, frequently at man-made ponds.

**BEHAVIOR:** Males are most often seen along the margins of ponds, making short patrols out over the water. This species usually doesn't stray too far from the margins of ponds and lakes.

**COMMENTS:** This is another of our numerous pennants, perhaps slightly less numerous than Calico and Halloween pennants, but nonetheless quite widespread in the state and not hard to find by walking around the margins of open ponds and lakes with some marshy or emergent vegetation along the shores. Oddly, Dunkle (2000) gives its abundance rangewide simply as "local", which implies some scarcity or difficulty in finding, which does not fit the case in NC.

## *Celithemis ornata* Ornate Pennant



**DISTRIBUTION:** Essentially limited to the Coastal Plain, barely ranging into the extreme southeastern Piedmont, with an odd outlier in Burke County in the foothills. However, it is primarily found in the southern half of the Coastal Plain (including Sandhills), being of spotty occurrence north of Harnett, Wayne, and Hyde counties. Apparently absent in the extreme northeastern Coastal Plain.

**ABUNDANCE:** Fairly common to common in the Sandhills; fairly common (to perhaps common) farther east in the southern half of the Coastal Plain. Rare to uncommon in the northern half of the Coastal Plain, and very rare in the Piedmont and the mountain foothills.

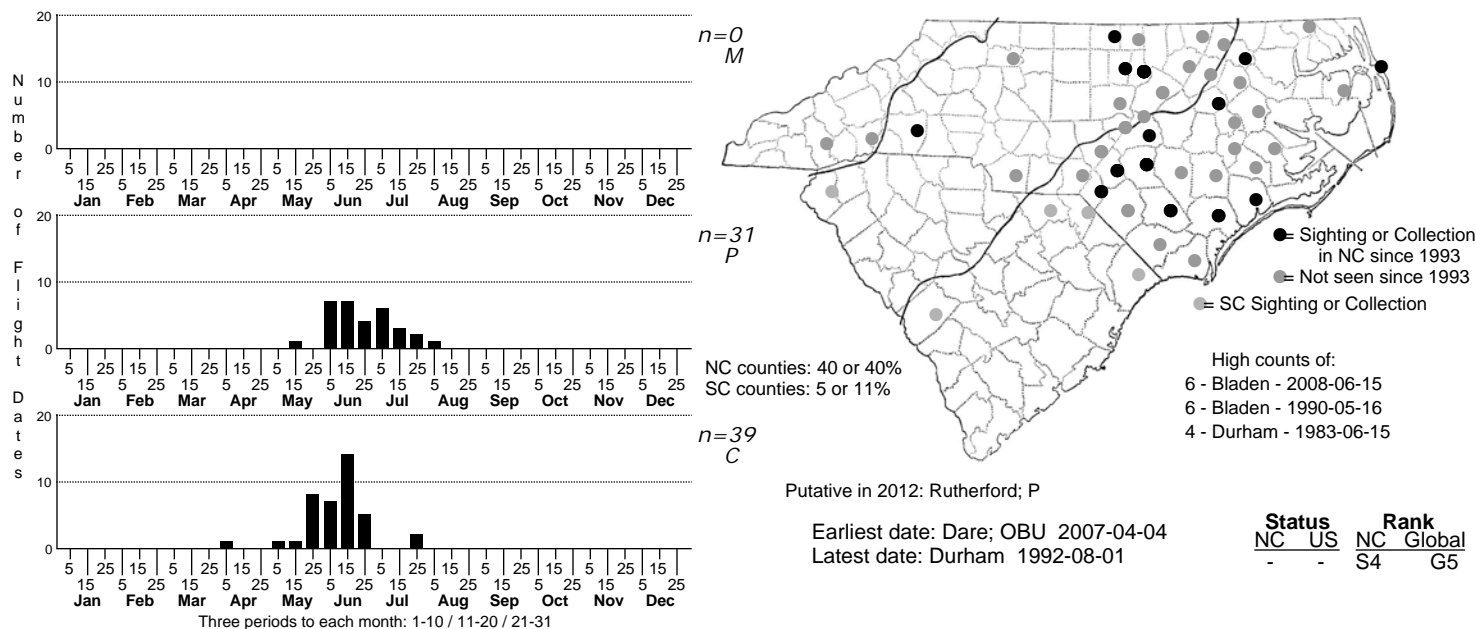
**FLIGHT:** A very long flight period, though less common after June. Occurs from early April to late October. Its flight is earlier in spring than most of the other *Celithemis* pennants.

**HABITAT:** Ponds and smaller lakes, as with other pennants. These water should contain marshy or emergent vegetation along the margins.

**BEHAVIOR:** Males are often seen around the margins of ponds, perching on twigs and making short patrols. Adults forage short distances from water, usually in sunny areas, such as fields, but not nearly as much as do Halloween Pennants.

**COMMENTS:** This species can be confused with Amanda's Pennant, and both may occur at the same ponds. However, Amanda's has a broader amber or reddish patch on the hind wing and typically forages much farther from water than does the Ornate Pennant; its flight averages later in the season. As with so many other pennants, the best strategy to see an Ornate Pennant is to walk around a margin of a pond, such as in the Sandhills or lower Coastal Plain. Beaton (2007) calls the species "Uncommon" in GA, but it is quite numerous in NC, mirroring Dunkle (2000), who says "common" across the range of the species -- TX to NJ.

## *Celithemis verna* Double-ringed Pennant



**DISTRIBUTION:** Primarily Coastal Plain and eastern Piedmont. A few records for the southern mountains and western Piedmont, but primary from Caswell, Chatham, and Union counties eastward. However, in the Coastal Plain it is of spotty occurrence in the extreme eastern counties and is possibly absent in a few counties near the coast.

**ABUNDANCE:** Generally uncommon in the inner half of the Coastal Plain and lower Piedmont, being most numerous in the Sandhills. Very rare to rare in the eastern Coastal Plain, especially close to the coast. Very rare in the central and western Piedmont and southern mountains. Apparently absent in most of the mountain region and western part of the Piedmont.

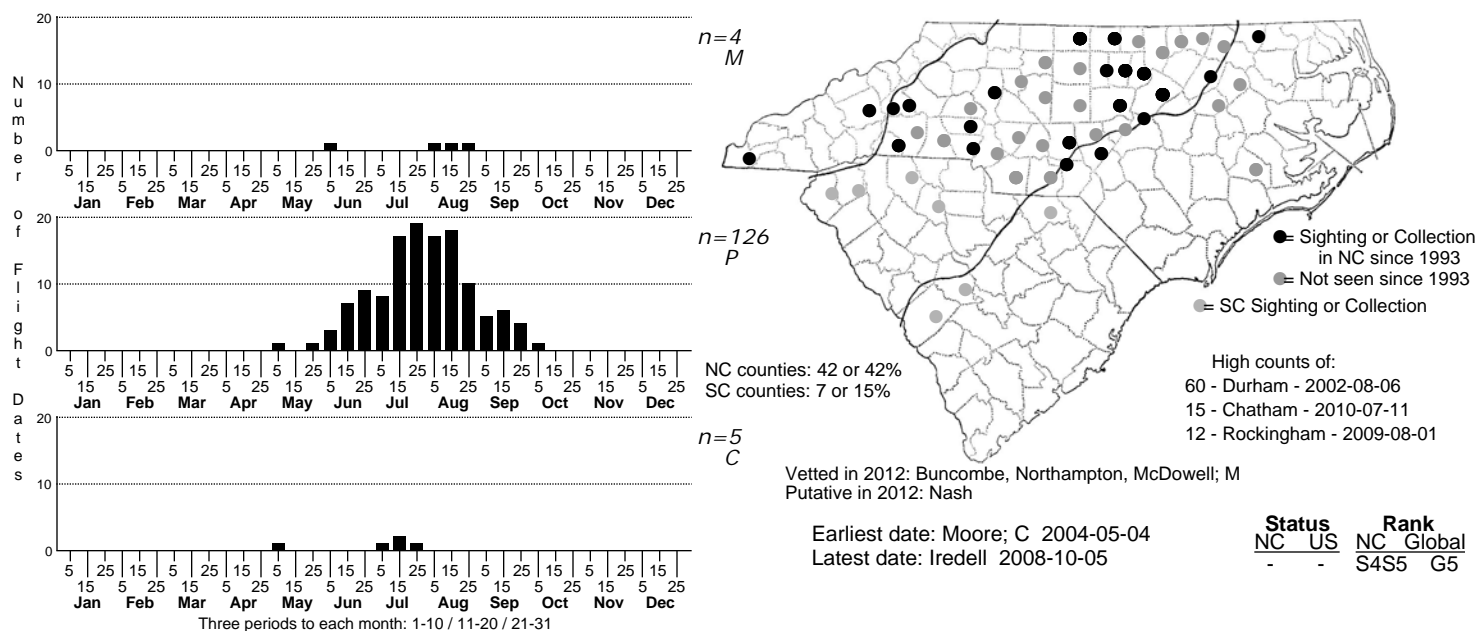
**FLIGHT:** Flight period is shorter and earlier than for other pennants (except Ornate) -- mainly from early May to late July, rarely to early August. There is a single early April record -- the only one we have for that month!

**HABITAT:** As with other pennants, it breeds at ponds and small lakes with much vegetation along the shore.

**BEHAVIOR:** Males are usually seen along the shore of a pond, making short patrols over the water or perching on twigs. Adults may forage short distances from water.

**COMMENTS:** This and the Red-veined are our only two "scarce" *Celithemis* pennants, and one may have to walk around several ponds or much lake shore (in the heart of the range) to find this species. Not helping is the fact that immatures and females are not overly easy to identify, and adult males look like small versions of Slaty Skimmers.

## *Dythemis velox* Swift Setwing



**DISTRIBUTION:** Primarily the Piedmont, but a few areas in the southern mountains (at low elevations) and in the western Coastal Plain, with an odd record for Jones County in the lower Coastal Plain. Present in the western portion of the Sandhills region.

**ABUNDANCE:** Fairly common (and apparently increasing) in the Piedmont, except scarce to locally absent in the northwestern portion of the province. Very rare in the southern (low) mountains and Coastal Plain portion of the range. The species has slowly been expanding its range northeastward in recent decades.

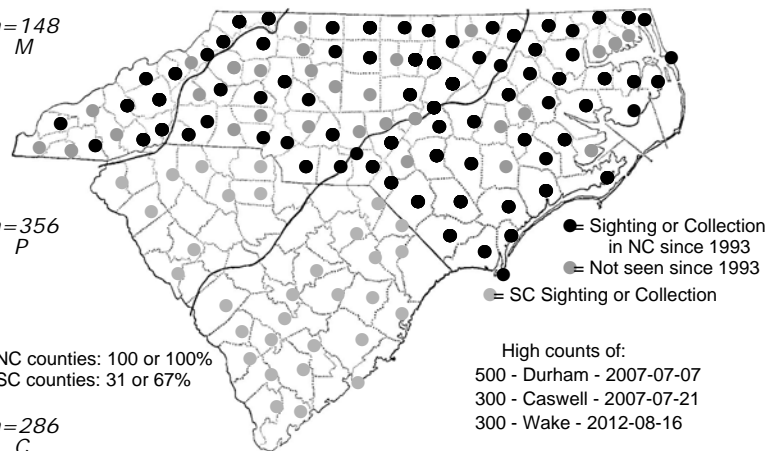
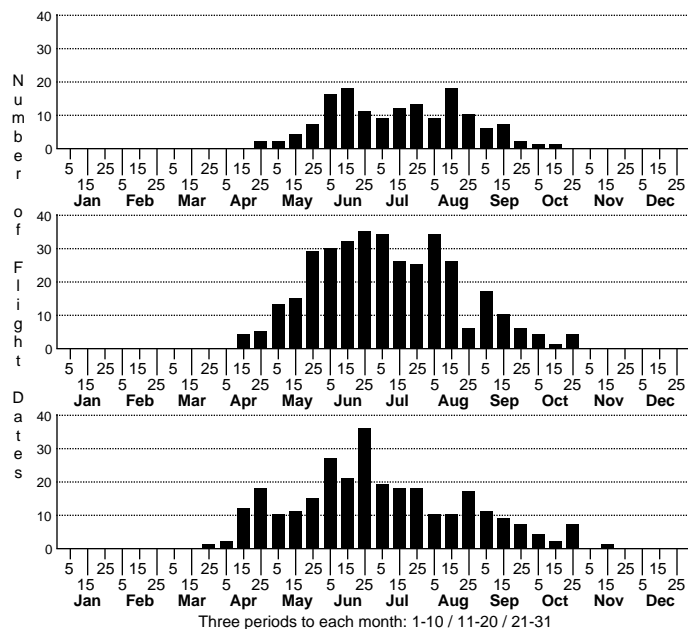
**FLIGHT:** Much of the warmer months, from early May to early October; however, most records fall between early June and late August. There are not enough data to define the flight periods in the mountains or Coastal Plain, as the above refers to the Piedmont province flight data.

**HABITAT:** Ponds and small lakes, but might breed also at slow rivers or wide creeks. These waters are typically in open or partly open situations.

**BEHAVIOR:** Males are almost always seen close to the margin of a pond or lake, perching usually several to many feet above water on twigs of small trees along the margin. Females may forage farther from water but are much less often seen.

**COMMENTS:** This is our only *Dythemis* (setwing), and thus it looks and acts like no other dragonfly in NC. The narrow black abdomen has a conspicuous white dorsal spot on segment 7. Most notable is that adults typically perch in a "sprinter's stance", with abdomen raised, seemingly ready to bolt at any moment. Sometimes they perch with wings drooped and held forward, as do Blue Dashers, but they can just as often perch with wings held above horizontal, angled over their thorax. They are somewhat wary and people typically need binoculars (or a net) to see them well.

## *Erythemis simplicicollis* Eastern Pondhawk



Earliest date: Gates 2012-03-27  
 Latest date: Hyde 1994-11-20

Status	Rank
NC US	NC Global
- -	S5 G5

**DISTRIBUTION:** Statewide; occurs in all 100 counties.

**ABUNDANCE:** Abundant in every county, more so in the Coastal Plain than farther west. Excessively abundant in many Coastal Plain locales. This is the most omnipresent odonate in North Carolina, seen on more field trips than any other species.

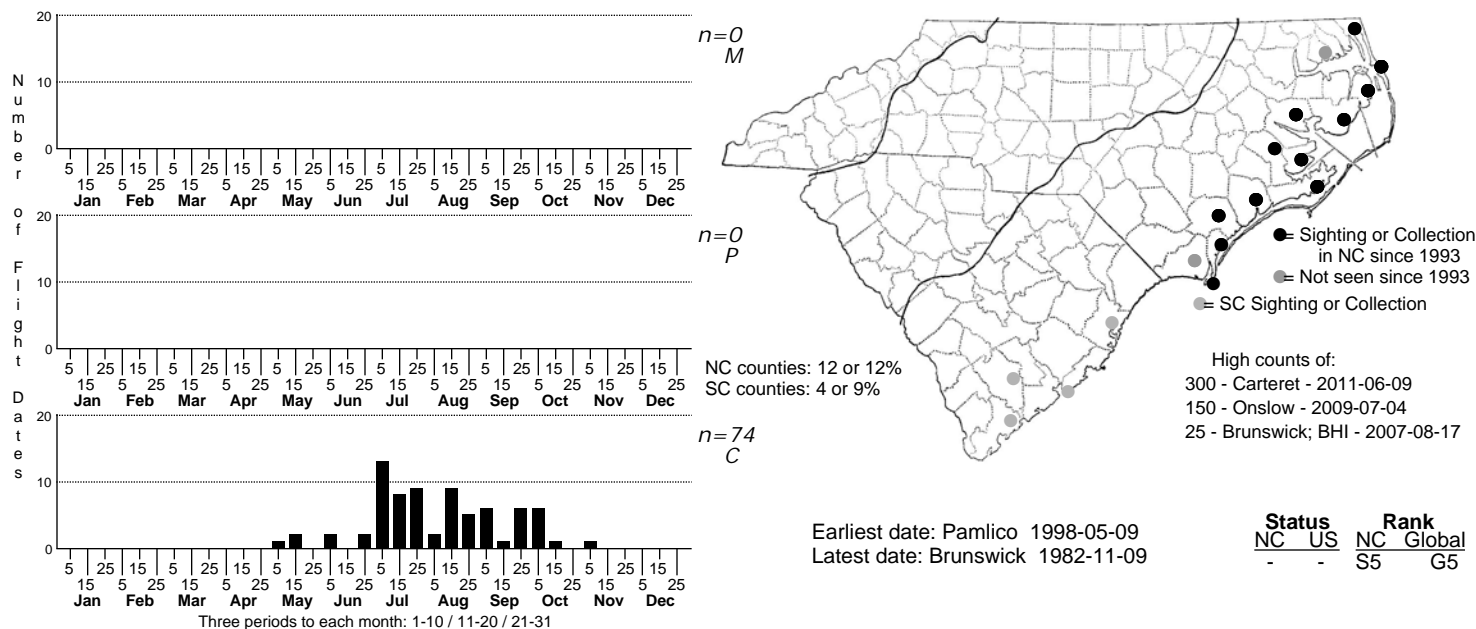
**FLIGHT:** Nearly throughout the dragonfly flight period, except absent in very early spring. The Coastal Plain flight extends from very late March or early April to late October, with one or two records for November. The Piedmont flight is slightly more narrow -- mid-April to late October, and the mountain flight is from late April to mid-October.

**HABITAT:** Ponds, lakes, swamps, and slower portions of river or creeks. Still waters.

**BEHAVIOR:** Adult males are found closer to water than are females and immatures, but they often are seen feeding well away from water. Females and immatures commonly forage far from water, along wooded roads and trails, in fields, and other open sites, though favoring areas close to woods. They often perch flat on the ground (as do many skimmers and some clubtails), but they also perch on twigs and other vegetation.

**COMMENTS:** This and the Blue Dasher are our most abundant dragonflies in NC, probably numbering in the tens of millions. In fact, Pondhawks are so excessively abundant in some areas in the Coastal Plain and they devour so many other insects that they nearly deplete sites of smaller butterflies, for example. This is our most predatory species, even consuming other Pondhawks! It takes practically no time to become familiar with the species, and they are adept at following you as you walk a jeep road or powerline clearing, ready to pounce on anything -- butterfly, moth, bee, etc. -- flushed by your footsteps.

## *Erythrodiplax berenice* Seaside Dragonlet



**DISTRIBUTION:** Strictly coastal, though found around the inner margins of Albemarle and Pamlico sounds and along other estuarine rivers.

**ABUNDANCE:** Common, at least along the southern and central coastal areas, and around the mainland side of Pamlico Sound. Seemingly less numerous around the margin of Albemarle Sound, as there are numerous counties along that "bay" without confirmed records. There are several counts of 150 or more individuals in a day, indicating that it can be locally abundant.

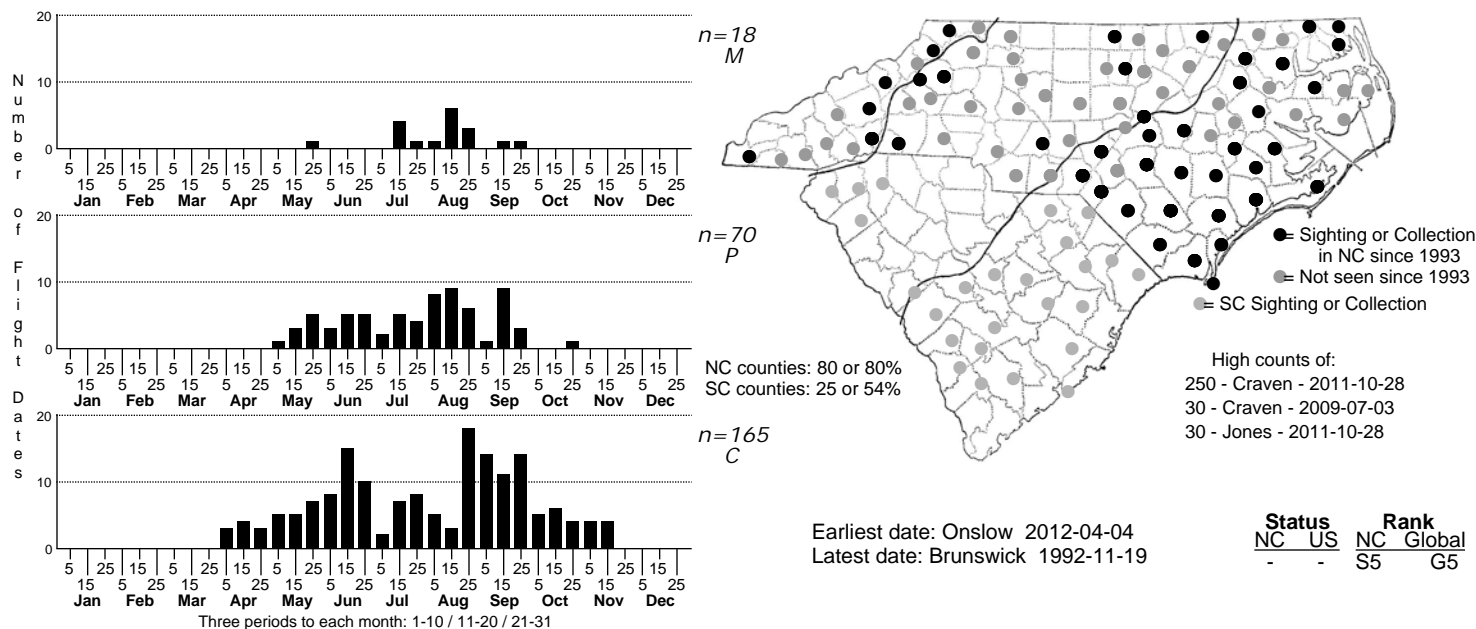
**FLIGHT:** Mostly late June to early October. However, there are a few records for early and mid-May, and as late as early November.

**HABITAT:** Brackish to salt marshes and other wet grasslands close to the coast.

**BEHAVIOR:** Both sexes perch conspicuously on twigs or other low vegetation, usually near a marsh but at times hundreds of yards from marshes.

**COMMENTS:** This is one of only several "estuarine" dragonflies in NC, along with Four-spotted Pennant, Needham's Skimmer, and Marl Pennant. If it weren't for its habitat, males would be easily confused with Double-ringed Pennant; however, in reality only Slaty Skimmer is of possible confusion, though the skimmer is much larger. Females and immatures look vaguely like Blue Dashers and various pennants. This species is usually easily found in its restricted habitat, though it can be overlooked because of its small size.

## *Erythrodiplax minuscula* Little Blue Dragonlet



**DISTRIBUTION:** Statewide, and probably occurring in all 100 counties. However, distribution is somewhat spotty in the western half of the Piedmont and mountains, probably owing to its inconspicuous behavior and tiny size, making it hard to spot where not numerous.

**ABUNDANCE:** Easily overlooked because of its tiny size and inconspicuous behavior, and thus is much more numerous in reality than observations may suggest. Numerous (common) in the southern half of the Coastal Plain (Sandhills east to Croatan National Forest in Craven/Carteret counties); only fairly common in the northern Coastal Plain. Uncommon in the eastern half of the Piedmont, but rare to uncommon in the western Piedmont and mountains.

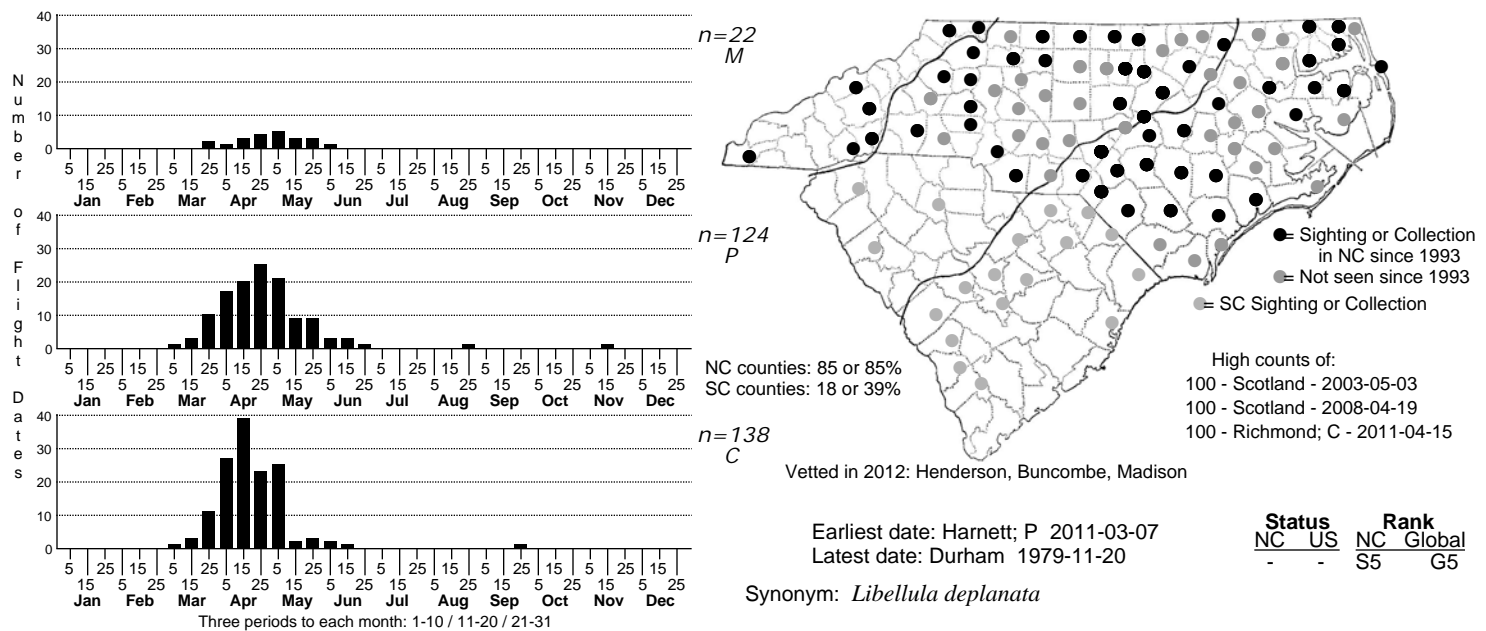
**FLIGHT:** A very long flight season. In the Coastal Plain from early April to mid-November, though not numerous until mid-June. The Piedmont flight is somewhat shortened -- from early May to late October. In the mountains, it is mainly from early or mid-July to late September, with a record for late May; oddly, there are no June records as yet for the mountains.

**HABITAT:** Ponds, lakes, marshes, and slower portions of rivers, typically places in full or partial sun.

**BEHAVIOR:** Next to the Elfin Skimmer, which is even smaller, this species is the most inconspicuous dragonfly that frequents open fields, powerline clearings, savannas, and other sunny places. Adults perch low in vegetation, often down in grasses and forbs, and make short flights, often barely above one's ankles.

**COMMENTS:** Males can be confused with the larger Eastern Pondhawk or slightly larger Blue Dasher, or with the slightly smaller Elfin Skimmer, and females can also be confusing to beginners. People who spend much time looking at wildflowers in savannas and powerline clearings become familiar with this species, as its favored foraging areas tend to be such diverse, moist herbaceous areas.

## *Ladona deplanata* Blue Corporal



**DISTRIBUTION:** Throughout the Coastal Plain and Piedmont; of spotty occurrence in the mountains, mainly at lower elevations.

**ABUNDANCE:** Common to locally abundant in the southern Coastal Plain, and common to very common in the rest of the Coastal Plain and in the eastern and central Piedmont. Fairly common in the western Piedmont, but rare to locally uncommon in the mountains, where it seems to be increasing (four "new" county records were added in the past few years).

**FLIGHT:** Spring season only. In the Coastal Plain and Piedmont, the flight occurs from early March mainly to early or mid-May, but sparingly to mid-June. There are several odd records for late summer and fall; two (August and November) are specimens (correctly labeled?) and one (September) is a sight report (correctly identified?). The mountain flight occurs from late March to early June.

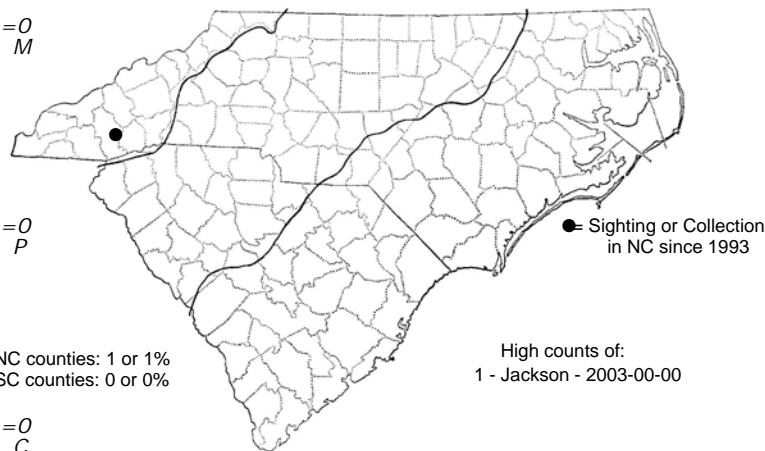
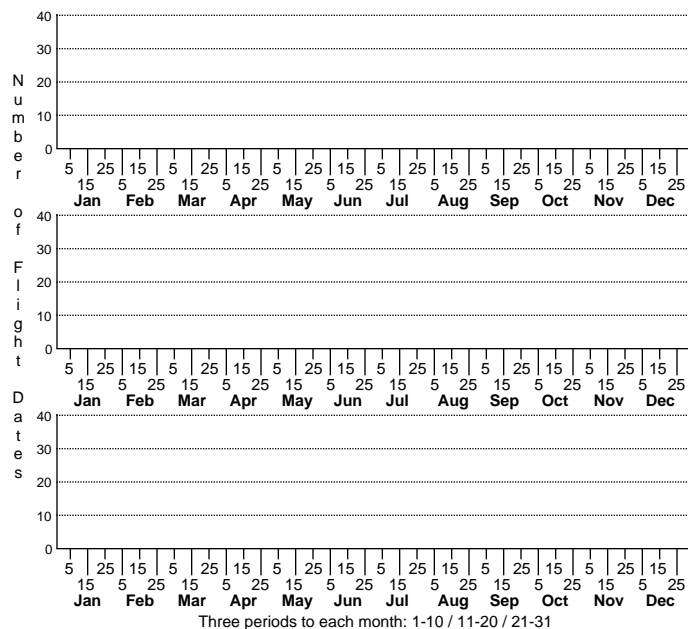
**HABITAT:** Ponds, lakes, and other slow-moving waters. Most numerous at somewhat infertile waters such as Carolina bay pools and lakes.

**BEHAVIOR:** Only the Common Whitetail, among numerous species in NC, behaves like a Blue Corporal. Both sexes forage primarily by perching on the ground, and by making flights in open woods, powerline clearings, and other semi-open areas (typically somewhat close to woods).

**COMMENTS:** This skimmer can be the most often seen dragonfly, along with the Common Baskettail, on a spring-season outing. Dozens can be seen in a day, mostly immatures and females, which can be easily identified by the white or cream "corporal" stripe on each shoulder. These shoulder stripes become blue and less conspicuous in the adult male. Because Blue Corporals usually perch on the ground on dirt roads, wide trails, and in powerline clearings, an observer quickly learns this species, often flushing them while looking for less common odonates or for butterflies.



# *Ladona julia* Chalk-fronted Corporal



Earliest date: Jackson 2003-00-00  
Latest date: Jackson 2003-00-00

Status		Rank	
NC	US	NC	Global
SR	-	S1	G5

**DISTRIBUTION:** This is a Northern species normally found south only to VA and WV. Quite a range extension occurred when an adult was collected in Jackson County in 2003. One should not assume that it occurs in most counties northward.

**ABUNDANCE:** Obviously extremely rare in the mountains.

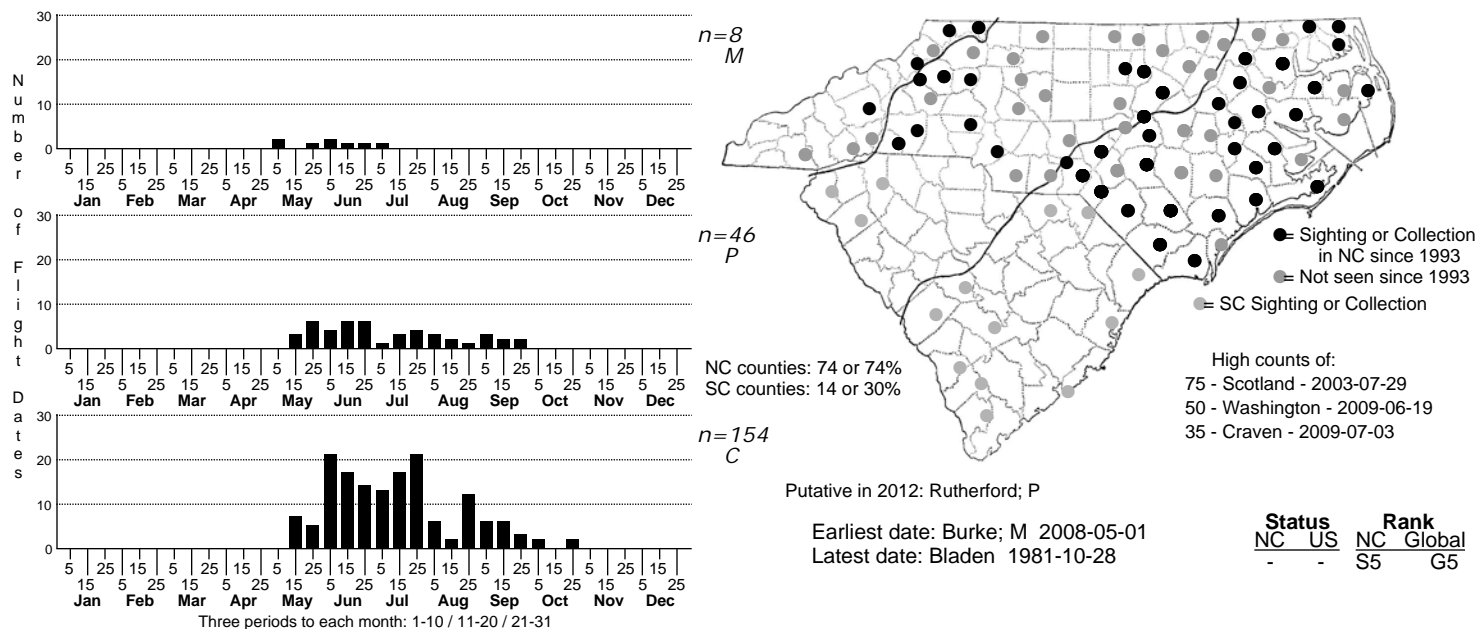
**FLIGHT:** Mainly in mid-summer. However, we do not yet have a date for the NC record.

**HABITAT:** Breeds at bogs, boggy pond or lake margins, and slow portions of streams -- usually in quite acidic waters.

**BEHAVIOR:** The species often forages well away from water, by perching on the ground or other conspicuous places. In this regard, it is quite similar in behavior to the Blue Corporal and Common Whitetail.

**COMMENTS:** This is a very common dragonfly in Northern states, and being quite bold in perching and striking in appearance (at least males), it is a familiar species. If it were widely occurring in the NC mountains, there would certainly have been more records by now, as it is hard to overlook. The NC record was taken in or near a bog in Panthertown Valley; a photo was reviewed by Steve Hall and Harry LeGrand of the NC Natural Heritage Program, but has not been re-located.

## *Libellula auripennis* Golden-winged Skimmer



**DISTRIBUTION:** Nearly statewide, though seemingly absent in the higher elevations in the mountains, and of spotty occurrence in the mountains and the western two-thirds of the Piedmont.

**ABUNDANCE:** Common in the Coastal Plain; uncommon to fairly common along the eastern edge of the Piedmont, but mostly uncommon in the Piedmont. Rare in the lower mountains.

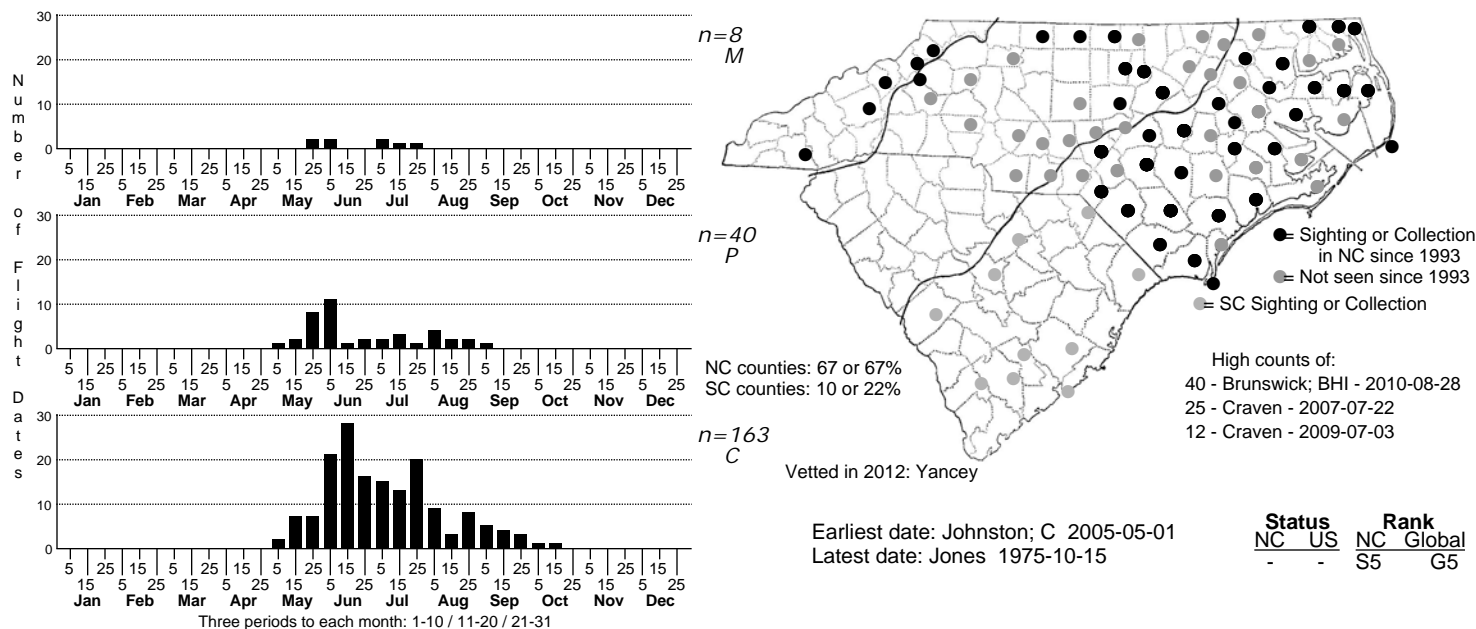
**FLIGHT:** The flight is from mid-May to early October, sparingly to late October, downstate. The mountain flight records are too few to suggest that the flight truly ends by early July; it ought to extend into September.

**HABITAT:** Ponds, lakes, marshes, ditches -- typically in open/sunny places.

**BEHAVIOR:** Males perch conspicuously on perches such as twigs around a pond or lake shore and make patrols over the water. They are quite wary at the water. Adults frequently forage in fields, powerline clearings, savannas, and other open or semi-open areas well away from water.

**COMMENTS:** Males are one of more beautiful dragonflies, with their scarlet-orange abdomen and wing veins. However, care must be taken to identify adult males, and especially females and immatures, from the closely related Needham's Skimmer, which is limited to brackish waters, though both species can occur in the same areas (up to a few miles from tidal water).

## *Libellula axilena* Bar-winged Skimmer



**DISTRIBUTION:** Throughout the Coastal Plain and the eastern half of the Piedmont; spotty distribution in the western Piedmont, though possibly could occur in all counties in the province. Only five counties known from the mountains.

**ABUNDANCE:** Fairly common in the Coastal Plain, more so in the southern half of the province, where it can be common locally. Uncommon in the eastern half of the Piedmont, but rare west of Stokes, Cabarrus, and Union counties, including the mountains.

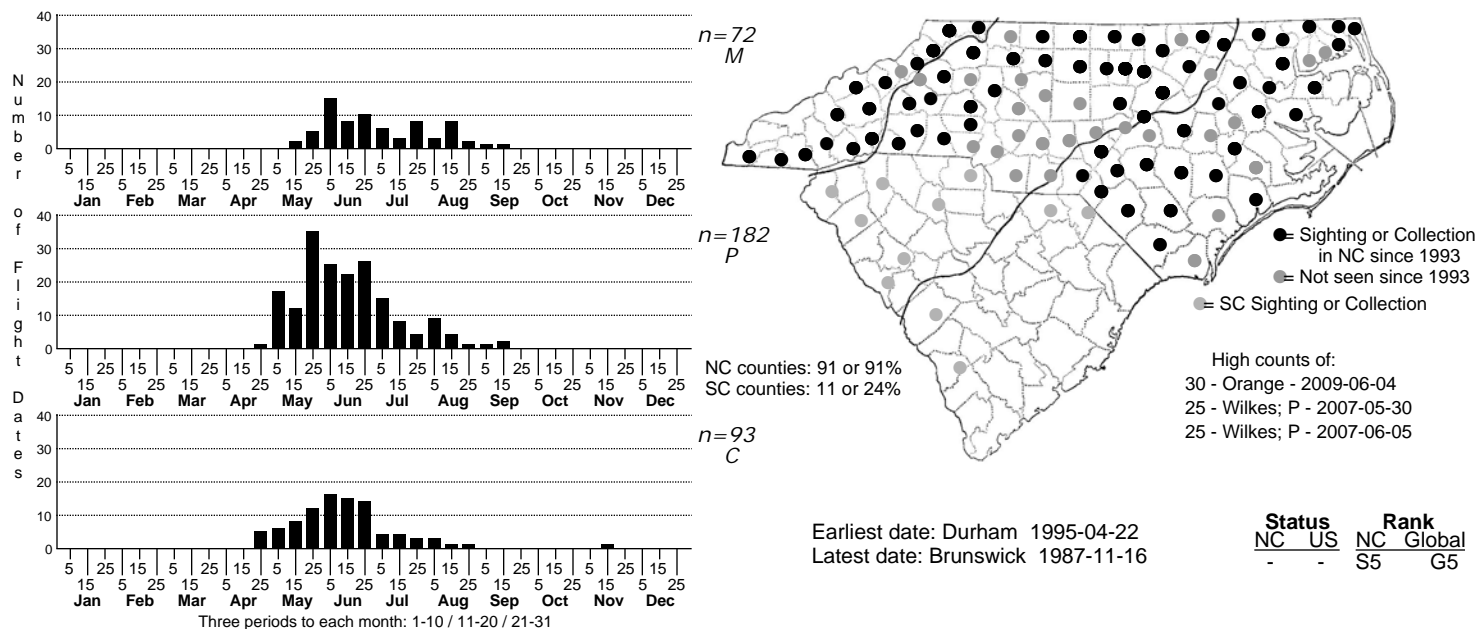
**FLIGHT:** Early May to early October in the Coastal Plain, and at least to early September in the Piedmont. Too few data from the mountains to adequately identify the flight period there; records fall between late May and late July.

**HABITAT:** Ponds, pools in swamps and powerline clearings, and other still waters close to forests.

**BEHAVIOR:** Males perch on twigs, often at least 6 feet off the ground, along a forested edge next to water, such as a swampy pool or temporary pond in a powerline, and make patrols back and forth over the water. Adults typically forage close to forests and edges, such as along jeep trails and powerlines through bottomlands and swamps.

**COMMENTS:** Though not one of our truly common skimmers, the Bar-winged is still a numerous dragonfly and not hard to find in some Coastal Plain locales. As indicated above, it usually does not forage far from forests, and one is not likely to see it in open fields.

## *Libellula cyanea* Spangled Skimmer



**DISTRIBUTION:** Statewide, but of spotty distribution in the extreme eastern Coastal Plain, at least on the Outer Banks and around the mainland portions of Pamlico Sound. Even so, it might be found in all NC counties.

**ABUNDANCE:** Common in the Piedmont; fairly common over most of the Coastal Plain and mountains (at least the lower and middle elevations). Seemingly scarce (if not locally absent) on the Outer Banks and the eastern Pamlico Peninsula.

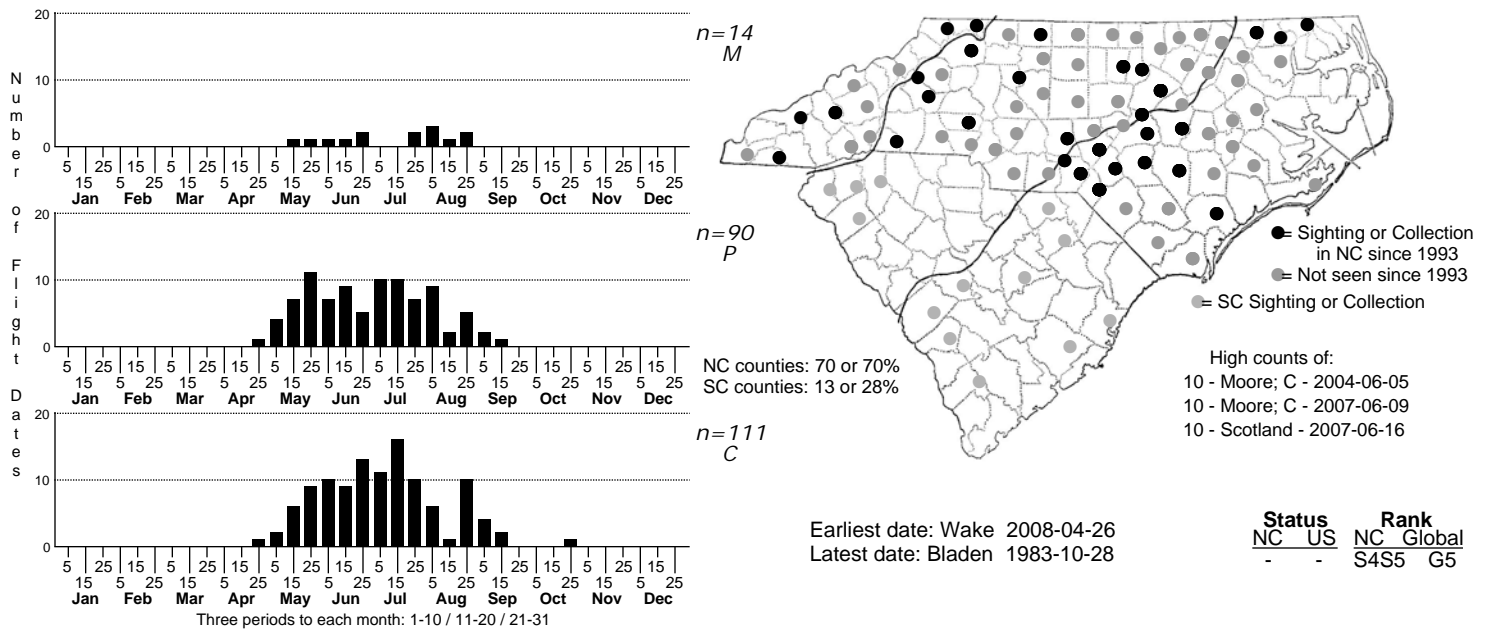
**FLIGHT:** A slightly shorter flight period than for many other skimmers -- very late April to mid-September. In the Coastal Plain, the latest records are only to late August, except for an odd mid-November record.

**HABITAT:** Ponds, small lakes, marshes, and other open waters with abundant floating or emergent vegetation.

**BEHAVIOR:** Males perch close to water and make short patrols. However, adults are typically seen well away from water, such as in powerline clearings, wide jeep roads, fields, and woodland edges. They perch on twigs, often fairly low and can be conspicuous or unwary when perching.

**COMMENTS:** This is our only dragonfly with black-and-white stigmas, rendering both males and females easy to identify, even though their body colorations can cause some confusion with other skimmers. The species seldom occurs in large numbers or swarms, as do some skimmers (such as Great Blue Skimmer, Common Whitetail, or Blue Corporal), but a handful are typically seen in the appropriate habitat and time of year.

## *Libellula flavida* Yellow-sided Skimmer



**DISTRIBUTION:** Nearly statewide, but apparently absent from the extreme eastern and northeastern Coastal Plain, where there are no records east of Gates, Bertie, and Carteret counties. Of spotty occurrence in the mountains, though likely present in all counties in that province.

**ABUNDANCE:** Uncommon to locally fairly common in the Sandhills; generally uncommon and local elsewhere over the Coastal Plain, Piedmont, and lower mountains. Rare in the eastern portions of the Coastal Plain and presumably the middle elevations of the mountains.

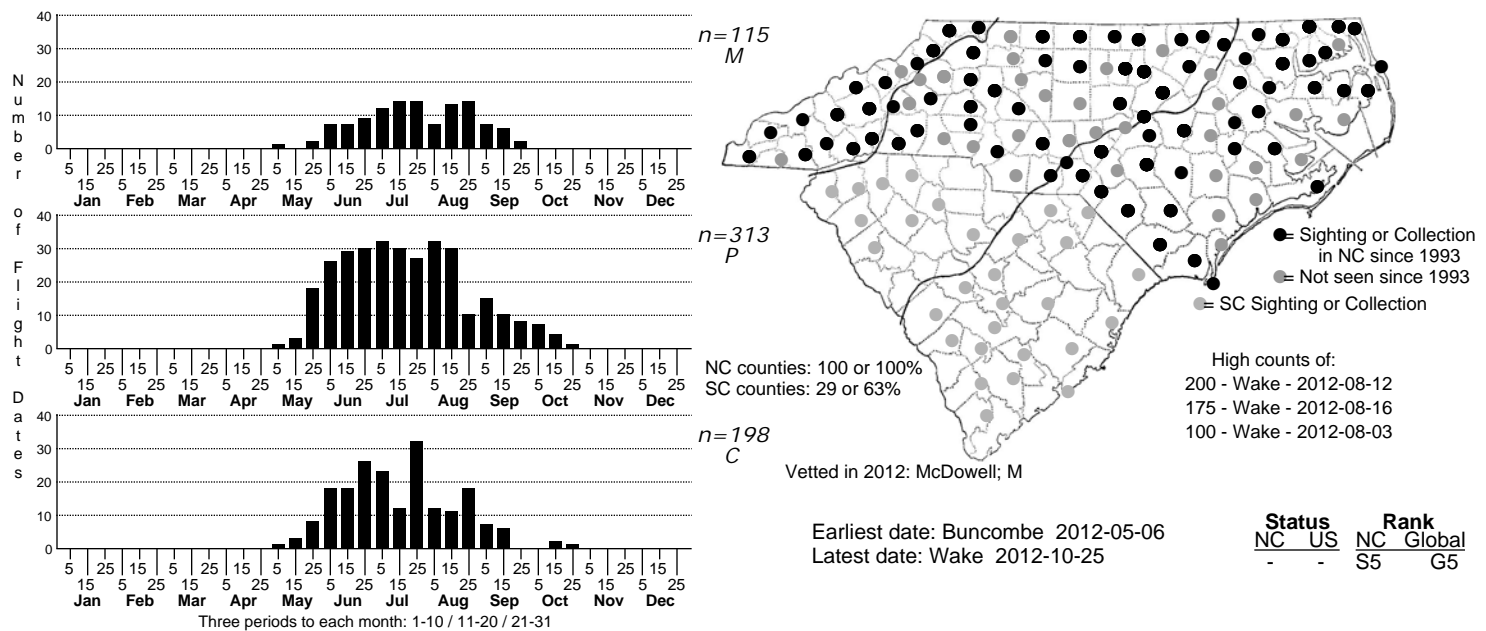
**FLIGHT:** Downstate, from late April to mid-September. Flies at least from mid-May to late August in the mountains.

**HABITAT:** More specialized than with other skimmers, being restricted more to seepages, small streams, and boggy spots, often with sphagnum, such as pools in powerline clearings.

**BEHAVIOR:** Males perch fairly low on vegetation and make short patrols over their pools and other small patches of water, typically in partly sunny areas.

**COMMENTS:** This is one of our least numerous skimmers, though it is a dragonfly that most active observers see a few times within the year, assuming they look in the right places. Adult males have some similarity of appearance to Eastern Pondhawk and Great Blue Skimmer, though the Yellow-sided has amber leading edges to the wings. They do not stray too far from boggy places with sphagnum or other partly-open mucky soils. It is somewhat local in occurrence, as such boggy wetlands are not widespread across a given county.

## *Libellula incesta* Slaty Skimmer



**DISTRIBUTION:** Statewide, occurring in all 100 counties.

**ABUNDANCE:** Common to abundant, though usually not in large swarms (such as with Eastern Pondhawk, Blue Dasher, or Common Baskettail). Abundance seems similar all across the state, though it might be slightly less numerous in the mountains.

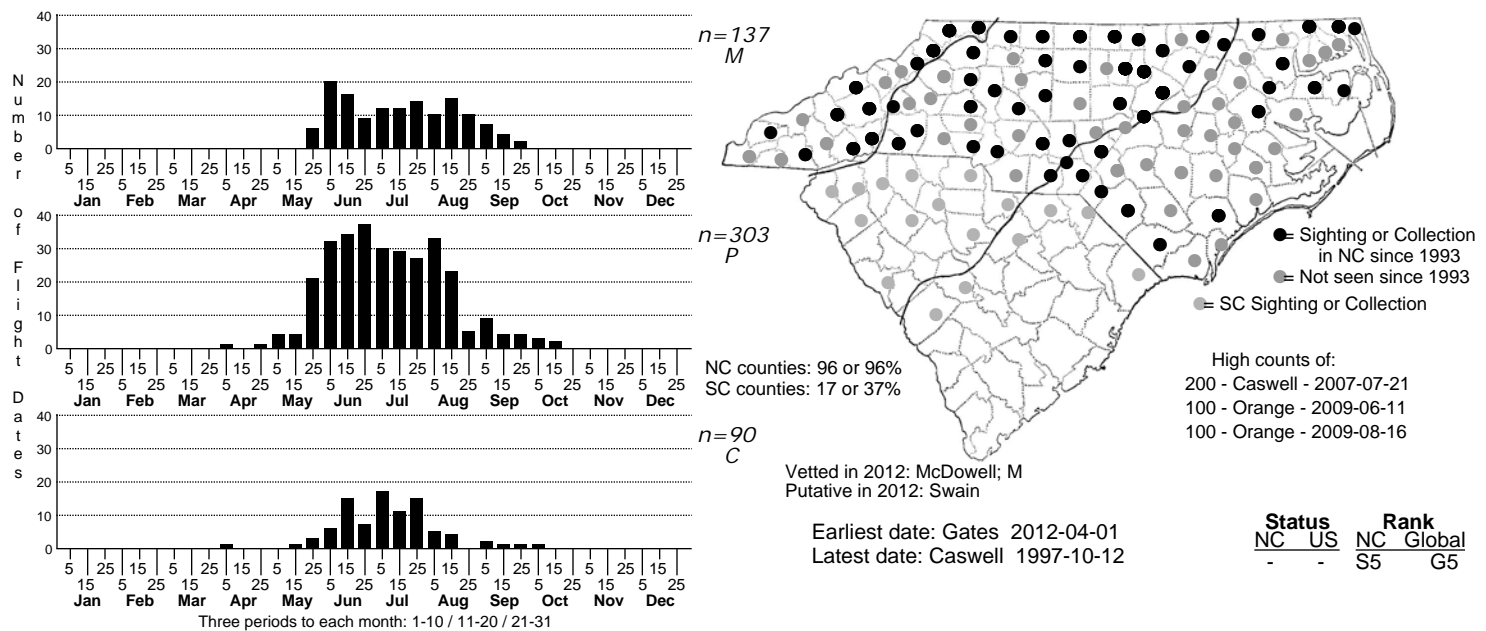
**FLIGHT:** Flies from early May to late October downstate, and to late September in the mountains.

**HABITAT:** Widespread around still waters of ponds, lakes, marshes, pools and puddles, and slow portions of rivers or creeks -- typically in wooded or partly wooded situations.

**BEHAVIOR:** Males are very conspicuous for a dragonfly, as they perch on bare twigs or other vegetation around a pond or lake margin and make constant forays, often chasing anything that flies nearby. Adults forage some distance from water, but not in large numbers in fields or other treeless areas.

**COMMENTS:** It is difficult to visit a pond or lake margin in the summer without seeing a Slaty Skimmer. Usually a walk around the shoreline will produce a number of them, even though Blue Dashers typically will be the most abundant dragonfly at such a pond or lake. Because Slaty Skimmers are very pugnacious and active fliers, if the species is around, you should quickly know it! It is definitely one of the state's most abundant dragonfly species.

## *Libellula luctuosa* Widow Skimmer



**DISTRIBUTION:** Essentially statewide; only a few extreme eastern Coastal Plain counties lack records. Presumably present in all counties except possibly one or two along the Outer Banks.

**ABUNDANCE:** Generally very common in the Piedmont and lower mountains; fairly common in the western Coastal Plain, though numbers decrease toward the coast, such that it is scarce in the eastern counties. Common in the middle elevations of the mountains. One of the more numerous dragonflies in the mountain province.

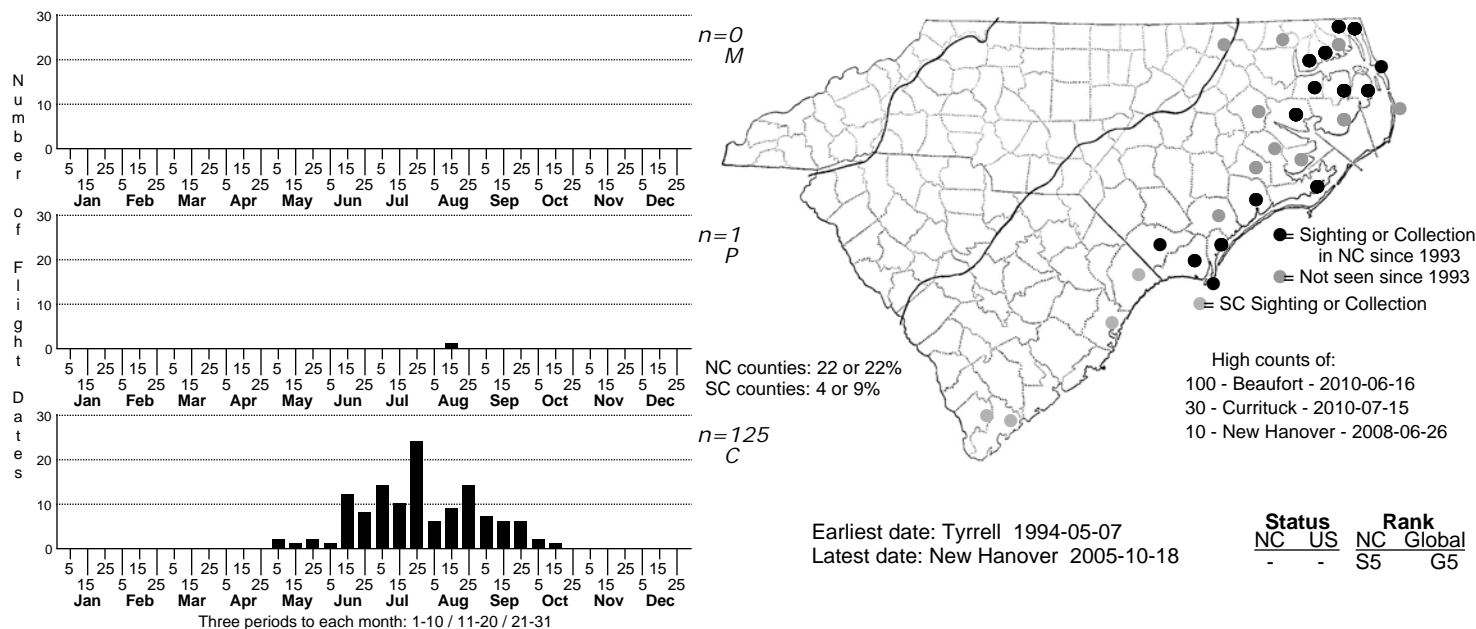
**FLIGHT:** Downstate, early or mid-April to mid-October, but not numerous until late May. In the mountains, the flight is from late May to late September.

**HABITAT:** Typical breeding sites as for other skimmers -- ponds, small lakes, marshes, and pools.

**BEHAVIOR:** Unlike most other skimmers, this species typically moves away from water to spend most of its time foraging in fields, powerline clearings, woodland borders, and other sunny to partly sunny places. Adults often perch on twigs of woody plants or on herbaceous vegetation, in such open areas.

**COMMENTS:** This might be the "flashiest" of our skimmers, as they are quite common, perch in open places within easy view, and have bold wing patterns. The wide black and frosted white bands of the male are impossible to miss when on the wing. Numbers of the species are seldom large at any given locale, as they seem territorial, and swarms are not generally noted. Nonetheless, it can occasionally be the most often seen dragonfly on a Piedmont walk, especially away from pond margins.

## *Libellula needhami* Needham's Skimmer



**DISTRIBUTION:** Essentially coastal, though it does occur on the mainland side of Pamlico Sound and up estuarine rivers as far as tidal waters are present. A collection record for Halifax County is perhaps open to question, as this seems much too far inland.

**ABUNDANCE:** Common and widespread; present all around Albemarle Sound (unlike the Seaside Dragonlet), as well as Pamlico Sound.

**FLIGHT:** Early May to mid-October; however, most records fall from mid-June to late September.

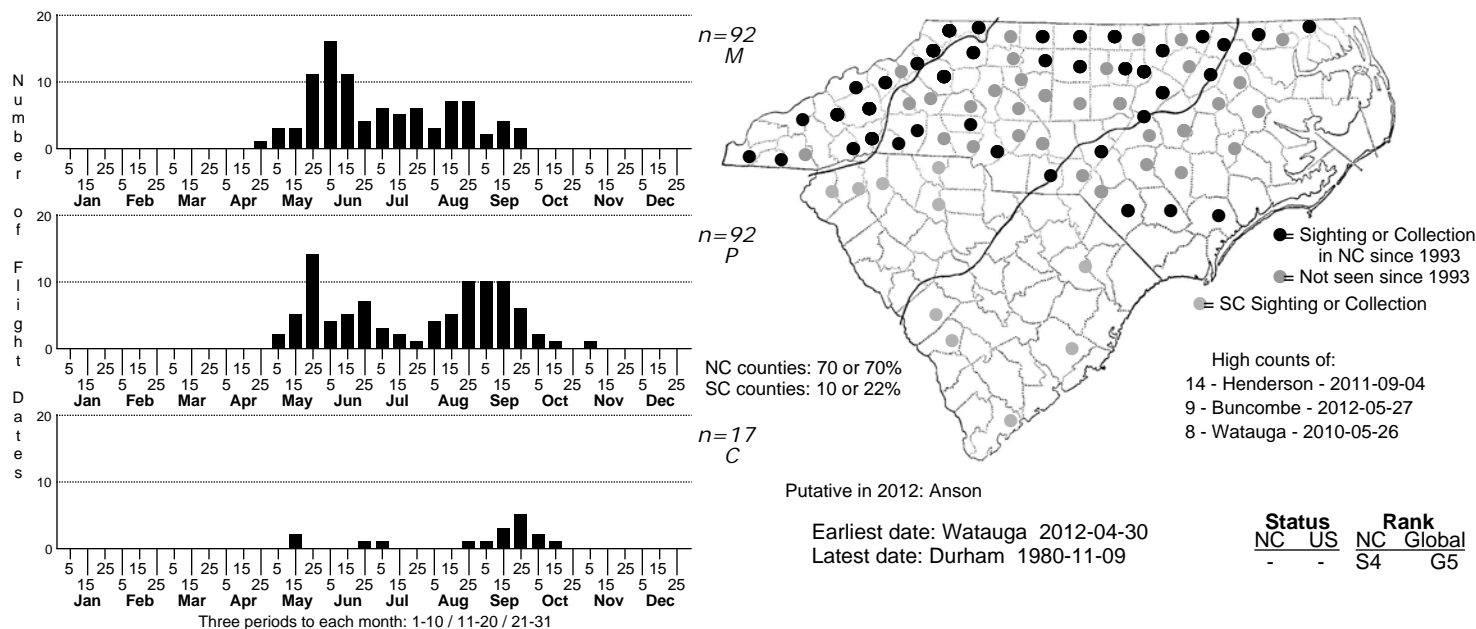
**HABITAT:** Brackish waters of marshes, tidal ponds, and other bodies of water in coastal areas (including some freshwater pools and ponds).

**BEHAVIOR:** Males patrol over tidal waters, including salt marshes. Adults do move away from tidal marshes and pools to forage in fields and other uplands, where they might come into competition with the closely related Golden-winged Skimmer.

**COMMENTS:** Males of this species are quite striking, even slightly more intense orange or scarlet than in the Golden-winged Skimmer, but identification needs to be made by study of the thorax, not by coloration. Also, Golden-winged is not typically found in tidal regions. An observer usually does not have to work hard to find this species, as it is much more conspicuous around tidal water than either the Four-spotted Pennant or the Seaside Dragonlet.



## *Libellula pulchella* Twelve-spotted Skimmer



**DISTRIBUTION:** Mountains, Piedmont, and western half of the Coastal Plain; seemingly absent in the eastern 40-50% of the Coastal Plain, as there are no records east of Gates, Pitt, Lenoir, and Pender counties.

**ABUNDANCE:** Uncommon to locally fairly common in the mountains. Uncommon in the Piedmont as a whole, though somewhat migratory, and in the eastern portions can be rather rare and apparently is not resident there. A rare migrant in the western half of the Coastal Plain, where seen mainly in fall migration.

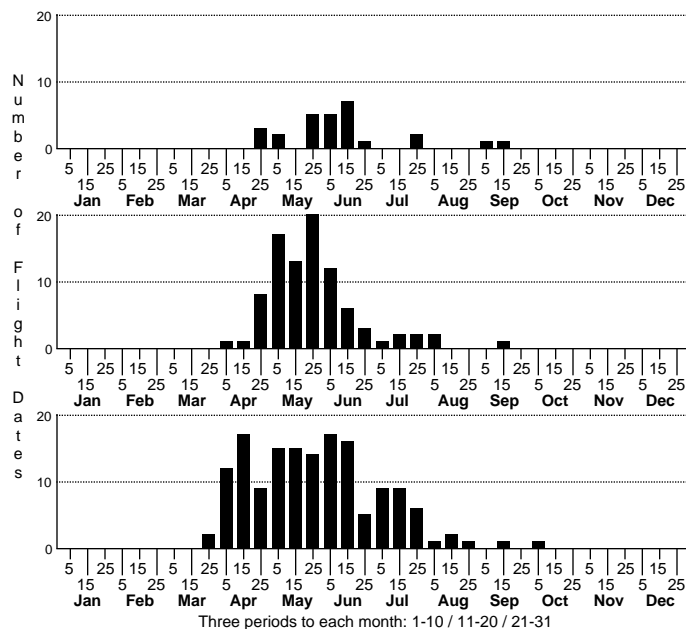
**FLIGHT:** In the mountains, where it apparently is a resident (though some records might refer to migrants), the flight is from late April to late September. The Piedmont set of flight dates is from early May to early October, with a stray record for early November. The fact that there is a clear dip in records in midsummer in the Piedmont flight chart is a strong indication that the species is mainly a migrant, seen mostly in spring/early summer and late summer/fall. In the Coastal Plain, where migratory, the dates range from mid-May to mid-October, with most being from late August into October.

**HABITAT:** Ponds, lakes, and marshes, typically in open situations.

**BEHAVIOR:** Males are very conspicuous as they patrol, often hovering, over their pools and ponds. Adults are similar to other skimmers in that they often forage well away from water in fields and wooded borders.

**COMMENTS:** Much is still to be learned about its biology in NC. This species is one of the few dragonflies that appears to be partly migratory in the state. Individuals appear in the Coastal Plain and in much of the Piedmont at sites away from breeding waters, often where observers are quite familiar with the general area. Plus, they are seen mainly in spring or late summer/fall. The female looks quite similar to the female Common Whitetail and thus could be overlooked. However, adult males are very conspicuous and elicit much excitement when seen, because of their "snazzy" appearance and relative scarcity in NC.

## *Libellula semifasciata* Painted Skimmer

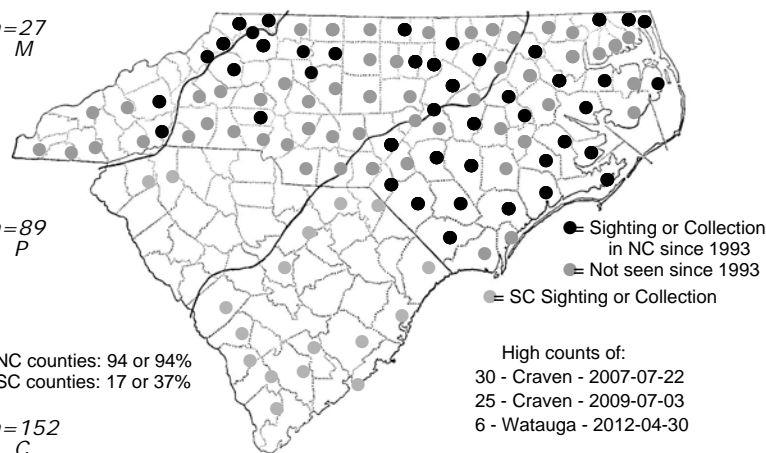


$n=27$   
M

$n=89$   
P

$n=152$   
C

NC counties: 94 or 94%  
SC counties: 17 or 37%



High counts of:  
30 - Craven - 2007-07-22  
25 - Craven - 2009-07-03  
6 - Watauga - 2012-04-30

Earliest date: Gates 2012-03-27  
Latest date: Jones 1997-10-01

Status		Rank	
NC	US	NC	Global
-	-	S5	G5

**DISTRIBUTION:** Essentially statewide, though likely scarce at middle elevations and perhaps absent at higher elevations in the mountains. Occurs throughout the Piedmont and Coastal Plain, including counties along the coast.

**ABUNDANCE:** Fairly common to locally common in the southern half of the Coastal Plain; fairly common in the northern Coastal Plain and in the lower Piedmont; uncommon in the remainder of the Piedmont and lower mountains; scarce at higher elevations. Abundance is quite at odds with Dunkle (2000) for its entire range, and Beaton (2007) for GA, both which indicate "uncommon". Perhaps the species is more numerous in NC than in most other states. Seldom occurs in large numbers on a given day, but quite widespread, at least in much of the Coastal Plain.

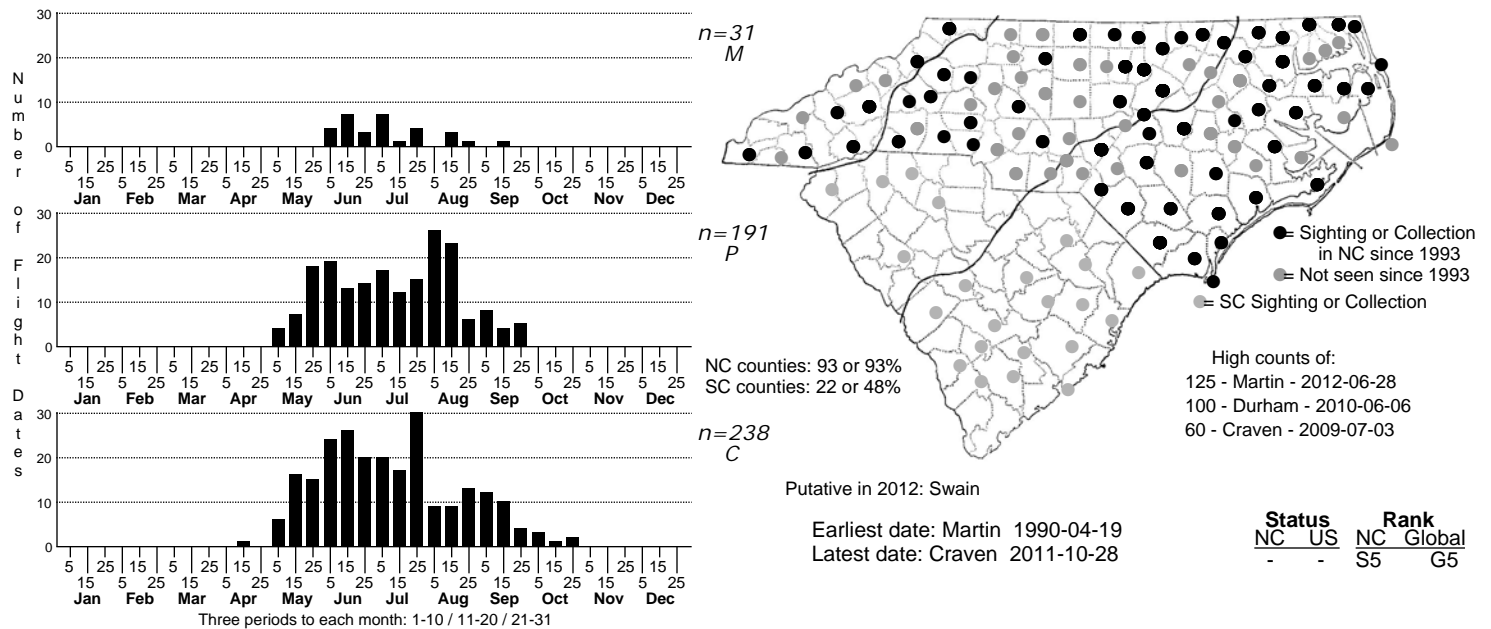
**FLIGHT:** Very late March or early April to mid-September, and rarely to early October, in the Coastal Plain and Piedmont; however, not numerous after early July. In the mountains, the flight occurs from late April to mid-September, but is scarce after mid-summer.

**HABITAT:** Marshes, bogs or boggy areas, grassy ponds, and other pools; favors semi-wooded areas.

**BEHAVIOR:** Less likely to spend much time around ponds, pools, and marshes than most other skimmers. Instead, adults are typically seen foraging well away from water (thus not making it clear what might be the breeding habitat), often in fields, savannas, powerline clearings, and woodland borders. They often perch conspicuously on tips of twigs or grass stems.

**COMMENTS:** This skimmer seldom occurs in swarms, but is often seen daily, particularly in the Coastal Plain. The species must be more common in NC than in any other state, as most observers in the eastern part of the state would not call it "uncommon". Because of their flashy wing pattern -- males and females look almost alike -- they are easily noticed, even by beginners or casual observers.

## *Libellula vibrans* Great Blue Skimmer



**DISTRIBUTION:** Essentially statewide, but as with several other skimmers, it is of spotty distribution in the mountains, though likely occurring in all counties in the province. Currently, it is known from just two-thirds of the mountain counties.

**ABUNDANCE:** Common, to locally abundant, in the Coastal Plain; common in the eastern and central Piedmont; somewhat less numerous (fairly common, at least locally) in the western Piedmont and lower mountains. This is one of the most numerous dragonflies in swamps and bottomlands.

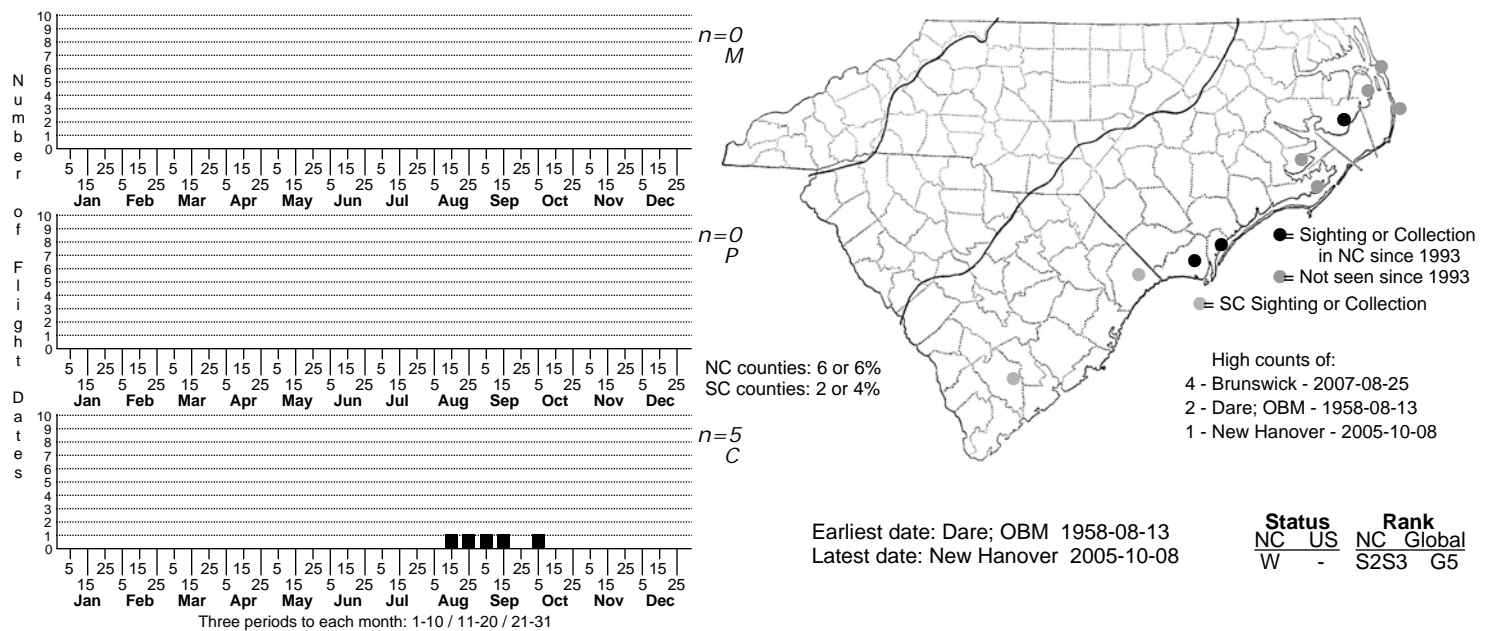
**FLIGHT:** Early May (very rarely in late April) into late September in the Piedmont and into late October in the Coastal Plain. The mountain flight, quite a bit narrower, is from early June to mid-September.

**HABITAT:** Still or slow-moving waters in mostly shaded areas, such as swamps and swampy pools, wooded beaver ponds, and very slow-moving streams.

**BEHAVIOR:** Males commonly perch around the margins of swampy pools and other wet areas in swamps and bottomlands. Adults typically stay close to forested areas, such as along roads through bottomlands and swamps. They usually perch on twigs of trees along the wooded edges, often 5-10' high. They can be quite pugnacious, with much chasing of other Great Blue Skimmers in their small territories.

**COMMENTS:** This is the largest of the *Libellula* skimmers, and though colored in pruinose pale blue like adult male Eastern Pondhawks and several other male skimmers, the male Great Blue Skimmer is separated by its very pale blue thorax (contrasting with the slightly darker abdomen) and greenish-blue eyes. They can occur in swarms of a dozen or more in a very small area. This species is one of the most common dragonflies (next to Eastern Pondhawk) that one sees along roads through swamps and bottomlands, especially as seen from bridges over swampy rivers and creeks.

## *Macrodiplax balteata* Marl Pennant



**DISTRIBUTION:** Strictly coastal, ranging north in its overall range only to NC. (Dare County is the northern limit). Interestingly, the first and only record for GA came in 2006 (Beaton 2007). It is not clear if the species is a permanent resident or is at least partly migratory in the state.

**ABUNDANCE:** Poorly known, but apparently rare, if not very uncommon, particularly if it somehow had not been found in GA until 2006. Dunkle (2000) calls it "common coastally", though that may apply mainly to FL.

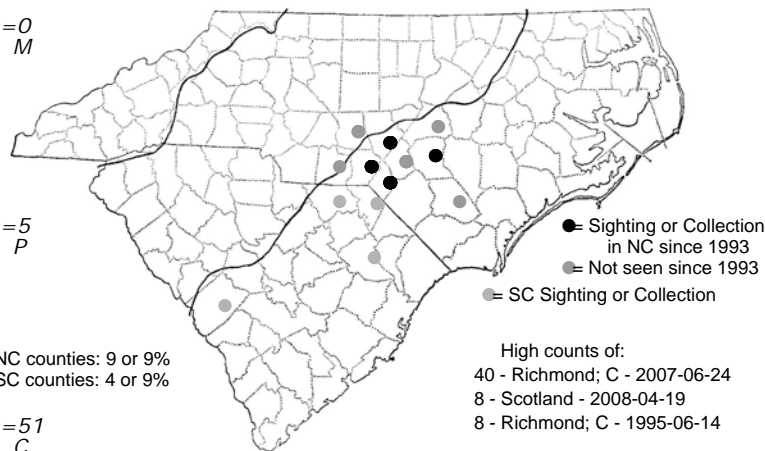
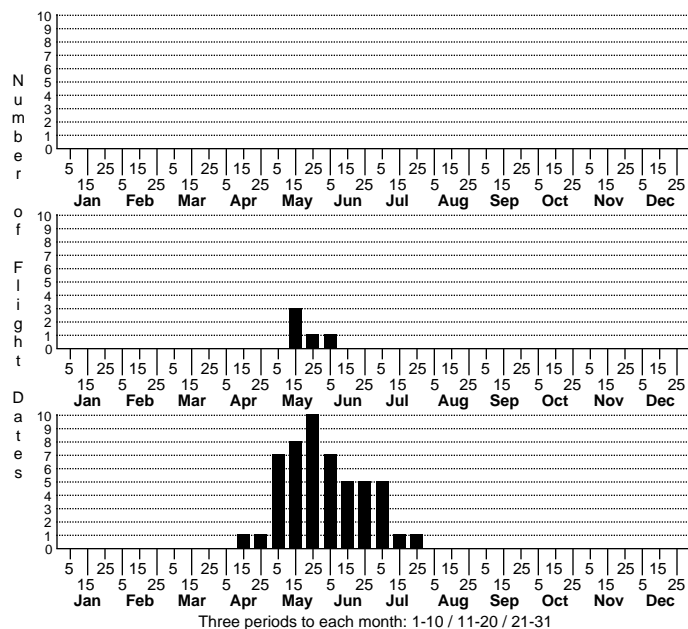
**FLIGHT:** The five flight dates available occur between mid-August and early October, a flight pattern consistent with this being a post-breeding migrant/stray from farther south; a resident pennant species should have a flight season starting at least by early summer. Much more data needed to clarify the situation.

**HABITAT:** Unusual for most dragonfly species in NC; breeds in brackish ponds or other pools with high pH waters, such as possibly man-made marl ponds near the coast or other man-made lakes in coastal areas.

**BEHAVIOR:** Males perch at the pools, often on twigs or stems in the pools, away from shore; they make forays over the water. Apparently females also stay close to water when foraging. Little information is available on the species north of FL (where common).

**COMMENTS:** So little is known about this species in NC, with few recent observations, that the NC Natural Heritage Program considers it a Watch List species, even though there are just about six records for the state. (Normally, with so few records, the species would be on the Rare List; however, it is felt likely to be a migrant species and not a resident one.) Jeff Pippen and Harry LeGrand have observed several individuals in both New Hanover and Brunswick counties, where males were seen flying over and perching along the margins of small man-made ponds within a mile of tidal water. Of the four strictly coastal dragonflies in NC -- along with Needham's Skimmer, Four-spotted Pennant, and Seaside Dragonlet -- the Marl Pennant is the only scarce species. Hopefully, it is a resident species in NC!

# *Nannothemis bella* Elfin Skimmer



Earliest date: Scotland 2008-04-19  
Latest date: Scotland 1985-07-21

Status	Rank
NC US	NC Global
W -	S3S4 G4

**DISTRIBUTION:** In NC, it is restricted to the Sandhills region, plus the adjacent western Coastal Plain (Bladen County). Although one might assume the northern edge of the range lies in NC, the whole range covers the Atlantic seaboard from southeastern Canada south to FL and LA, and west to MN. Clearly, the species has a highly disjunct overall range.

**ABUNDANCE:** Uncommon to locally fairly common in the Sandhills, but as it is the smallest dragonfly, it is very easily overlooked. Probably rare east of the Sandhills. Might occur in the adjacent edge of the Piedmont.

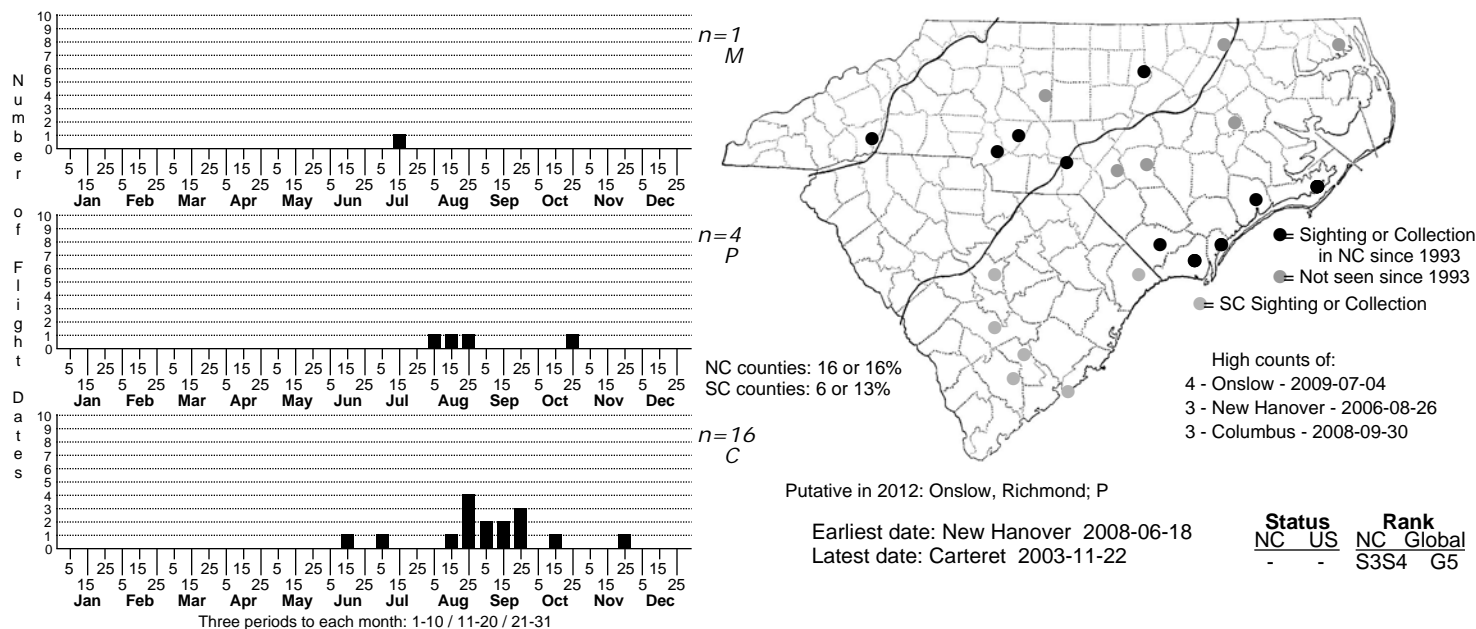
**FLIGHT:** A rather narrow flight period; mid-April to late July.

**HABITAT:** Highly restricted to boggy spots, with much sphagnum; often at seepages. These can be around the margins of beaver ponds or man-made ponds, damp places in powerline clearings, and natural fire-maintained seepage slopes.

**BEHAVIOR:** Adults perch and fly very close to the ground/water, often no more than 4-5" off the ground, amid grasses, sedges, and rushes. They seldom arise above the height of the herbaceous vegetation.

**COMMENTS:** To see the species, one must go to boggy places around a pond margin or a wet powerline clearing in the Sandhills, and expect to get one's feet damp. They can be confused with Little Blue Dragonlet, which shares its habitat but is slightly larger and has a less obvious club. Be careful where you step, as you might have them underfoot!

## *Orthemis ferruginea* Roseate Skimmer



**DISTRIBUTION:** A northbound stray or migrant in most areas of the state, but almost certainly now a resident in the extreme southeastern counties, north to Carteret County. Widely scattered over the Coastal Plain, with a few Piedmont records, and one from Henderson County in the mountains. Greatly expanding its range northward; thus, the county map will likely become out-of-date very quickly. Primarily found along the southern coast, north regularly to Carteret County, but one must assume it is not a resident (yet) away from coastal counties, based on its very spotty range inland.

**ABUNDANCE:** Increasing in recent years; probably rare 10 or 20 years ago. Now, it is uncommon to locally fairly common, in coastal counties northward to Carteret County. Very rare farther inland and northward.

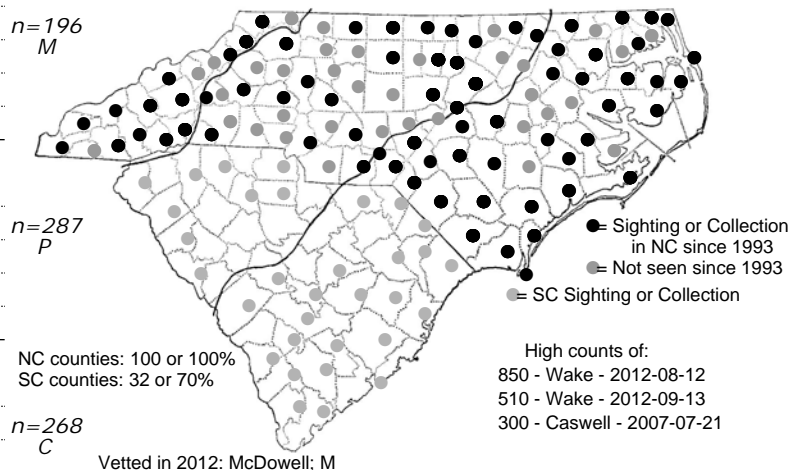
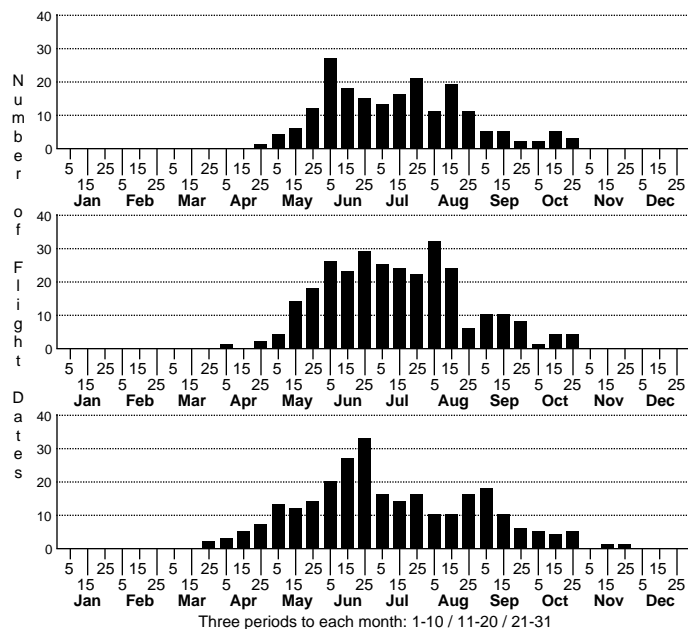
**FLIGHT:** Mid-June to mid- or late November, but mostly in August and September. These dates suggest a fall migrant species, moving north after breeding farther to our south. However, there are likely a few sites where it is resident.

**HABITAT:** Ponds, marshes, and lakes near the coast. Despite it being seen mainly near the coast, most breeding waters are probably fresh, though it does use brackish waters.

**BEHAVIOR:** Males are very conspicuous as they perch on twigs at their pools or ponds; they are quite active and do much chasing and patrolling. Adults will often feed well away from pools, as do most other skimmers.

**COMMENTS:** The deep rose-pink color of the male's abdomen is not often seen in the animal kingdom, even in birds or butterflies, and is more reminiscent of the rosy color of the petals of many wildflowers! This species is currently undergoing a rapid northward expansion in the range and in numbers. It is not hard to find at various places around Wilmington, such as near gardens and other suburban places. But questions remain, especially regarding residency status in NC away from the southern coast. It was dropped as a Watch List species by the NC Natural Heritage Program in fall 2010.

## *Pachydiplax longipennis* Blue Dasher



Earliest date: Moore; C 2012-03-27  
 Latest date: Carteret 2003-11-21

Status	Rank
NC US	NC Global
- -	S5 G5

**DISTRIBUTION:** Statewide, occurring in all 100 counties.

**ABUNDANCE:** Abundant throughout. This is arguably the most numerous dragonfly in NC (and the eastern United States), possibly even outnumbering the ubiquitous Eastern Pondhawk.

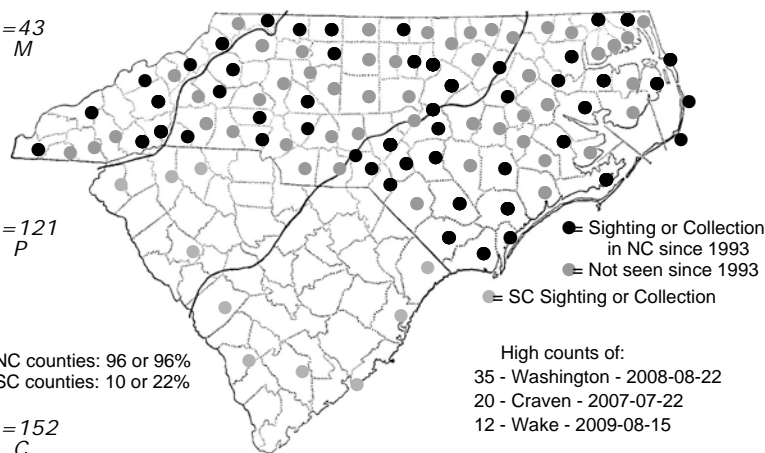
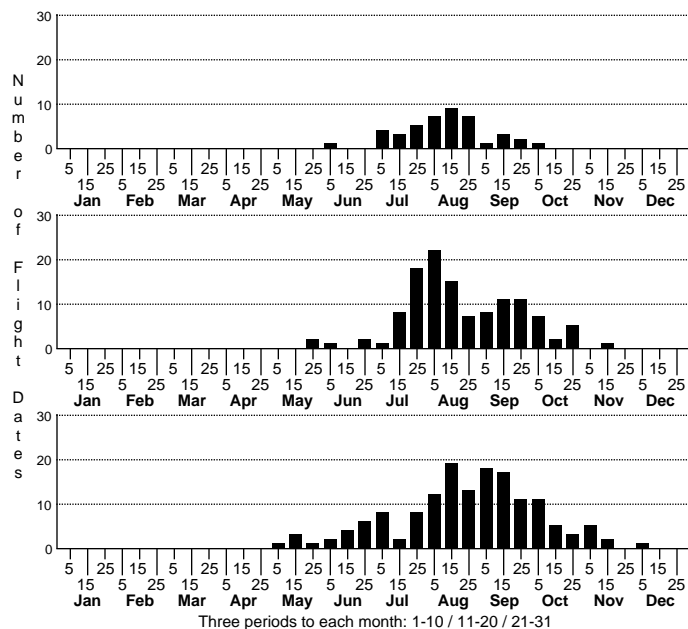
**FLIGHT:** Throughout most of the odonate flight season. Downstate, from late March or early April to late October, rarely to late November. In the mountains, from late April to late October.

**HABITAT:** A wide range of still water, from ponds, lakes, ditches, canals, pools, and marshes; occasionally in slow-moving portions of rivers or creeks.

**BEHAVIOR:** Males are frequently seen perching on twigs or herbaceous vegetation along the margin of a pond, making short forays over the water for patrolling purposes. Both sexes feed well away from water, especially females. They perch conspicuously, typically within 3-4' of the ground, in fields, powerline clearings, savannas, and many other places, both in full sun or partial shade.

**COMMENTS:** For many species of skimmers, pennants, and other members of the Family Libellulidae, an observer hopes to find a given species by walking along the shoreline of a still body of water. This is seldom a problem with finding Blue Dashers, as every pond seems to have a dozen or more individuals, often equaling or exceeding the number of all other dragonflies of other species! Total numbers of Blue Dashers in NC must total in the tens of millions.

## *Pantala flavescens* Wandering Glider



Putative in 2012: Madison

Earliest date: Washington 1976-05-06  
Latest date: New Hanover 2009-12-03

High counts of:  
35 - Washington - 2008-08-22  
20 - Craven - 2007-07-22  
12 - Wake - 2009-08-15

Status		Rank	
NC	US	NC	Global
-	-	S5	G5

**DISTRIBUTION:** Essentially statewide, but not as numerous in the mountains as downstate, as a handful of counties there lack records. Nonetheless, presumed to occur in all 100 counties.

**ABUNDANCE:** A widespread species, seen often during the year, especially during the fall season. Abundance is difficult to assess or describe, as it is migratory and does not establish permanent colonies, though generally fairly common to at times common across the state, being somewhat more numerous in the Coastal Plain than farther westward. Observers frequently see individuals in cities and towns, attempting to lay eggs on shiny car hoods; however, large numbers are seldom seen in a given day, and it is often missed in field work in "the country". Seems to be most often seen along or near the coast in the fall, migrating southward (presumably).

**FLIGHT:** Downstate, from early May to early November, most frequent in mid-summer and fall. There is even a record for early December. In the mountains, the flight is from early June to early October.

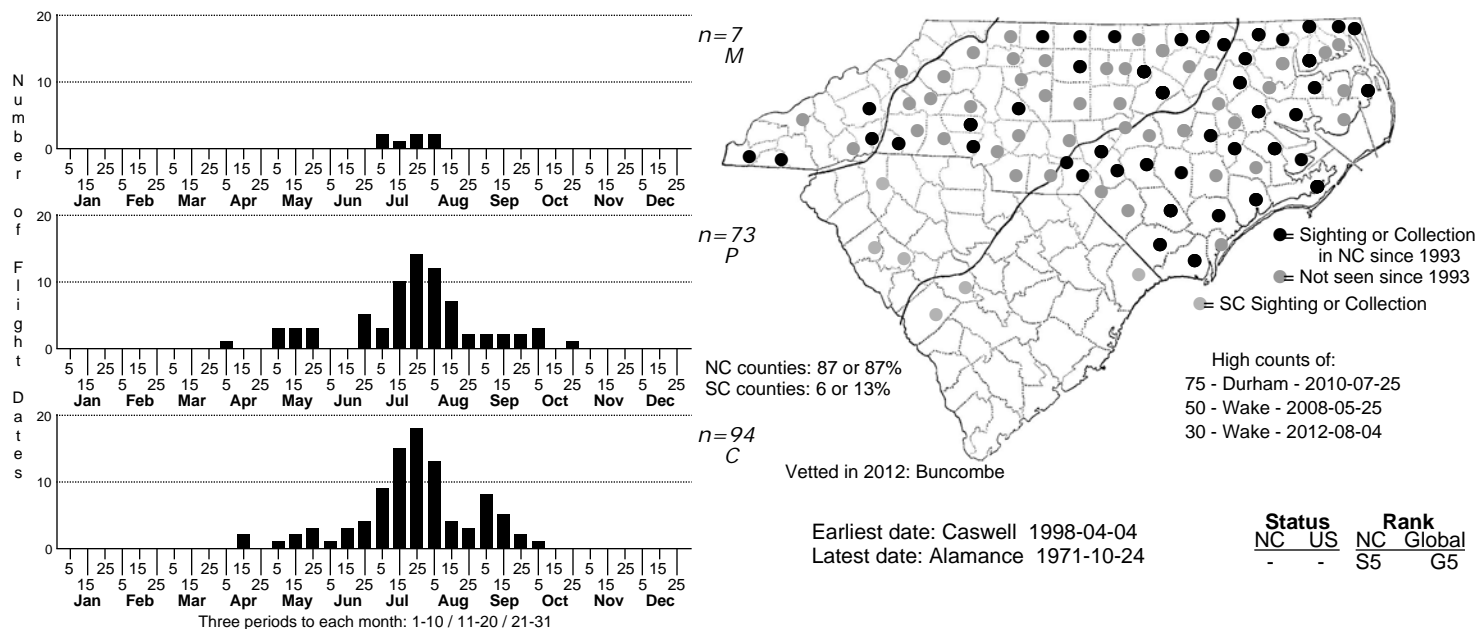
**HABITAT:** Unlike all other dragonflies except the related Spot-winged Glider, it uses small, temporary puddles and pools for depositing eggs. These can be rainwater pools on city streets, as well as puddles in powerline clearings and other ephemeral ponds.

**BEHAVIOR:** Only the two gliders (*Pantala*) share the "wandering" habit of foraging. Males may patrol temporary pools where eggs have been laid, and females (of course) can be seen ovipositing in such temporary pools. However, they spend most of their time in wide-ranging flights, often 5-10' or higher, over all types of open country, from fields, marshes, towns, dunes, and even offshore! Like swallows and swifts, these dragonflies seldom seem to perch, but when found hanging from a twig, they can be somewhat unwary.

**COMMENTS:** Wandering Gliders can literally be seen anywhere, from downtown streets to over the Gulf Stream. Because they are constantly on the wing, identification can be difficult, and often one must assume that an amber-colored dragonfly, with no obvious wing markings (to rule out saddlebags, for example), is a Wandering Glider -- especially if seen close to the coast in the fall. A range map for this species is a bit misleading, as it is a hit-and-run type of breeder, with no site fidelity.



## *Pantala hymenaea* Spot-winged Glider



**DISTRIBUTION:** Occurs over all of the Coastal Plain and Piedmont (though lacking records for a few counties in the Piedmont). It is of sporadic occurrence in the mountains, where it has been found in just 40% of the counties.

**ABUNDANCE:** As with the Wandering Glider, this is a migratory species, constantly on the move, with abundance difficult to assess. Usually less numerous than Wandering Glider, though it can occur in swarms, more so than does the Wandering. Generally uncommon in the Coastal Plain and Piedmont, though it may be fairly common at times, especially in the Coastal Plain. Rare in the mountains.

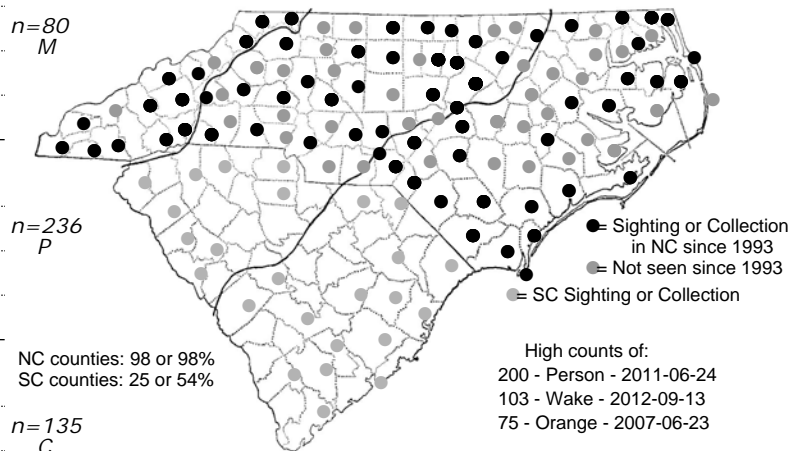
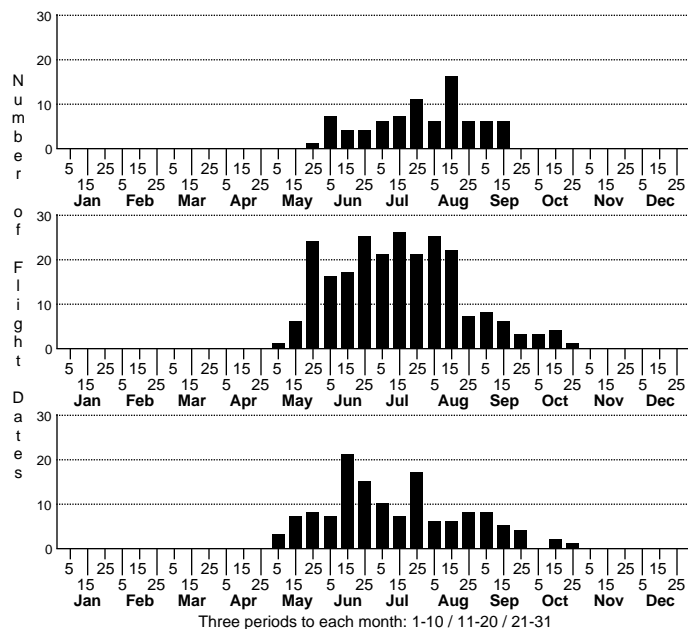
**FLIGHT:** Early or mid-April to late October downstate. The few mountain records are concentrated from early July to early August, but the flight there is certainly longer than just a month.

**HABITAT:** Similar to Wandering Glider, it uses small, temporary puddles, pools, and shallow ponds for breeding.

**BEHAVIOR:** Males may be seen patrolling near puddles, and females may be seen ovipositing at such wet places, though Spot-winged Gliders seldom seem to enter cities to attempt ovipositing on shiny car hoods and rainwater pools in streets. Adults forage widely over all types of habitats, especially open areas along and near the coast.

**COMMENTS:** This species is not familiar to casual observers, despite records from 87 of the 100 counties, because adults infrequently perch, and identification must often be made in flight. Having a net handy to catch such non-perching dragonflies helps! Adults do have a small dark patch at the base of the hind wing, as the common name indicates; sometimes an observer can see this spot in the field, though the overall color of the adult Spot-winged is a bit buffier/browner than the amber-colored Wandering Glider.

## *Perithemis tenera* Eastern Amberwing



NC counties: 98 or 98%  
SC counties: 25 or 54%

High counts of:  
200 - Person - 2011-06-24  
103 - Wake - 2012-09-13  
75 - Orange - 2007-06-23

Putative in 2012: Swain

Earliest date: Davidson 1999-05-03  
Latest date: Wake 2012-10-25

Status	Rank
NC US	NC Global
- -	S5 G5

**DISTRIBUTION:** Statewide, but as with so many other "statewide" species, it has not been recorded from all mountain counties, though presumably occurring in all 100.

**ABUNDANCE:** Common to locally very common essentially statewide, but slightly less numerous (but still common) in the mountains. There are several one-day counts over 100 individuals.

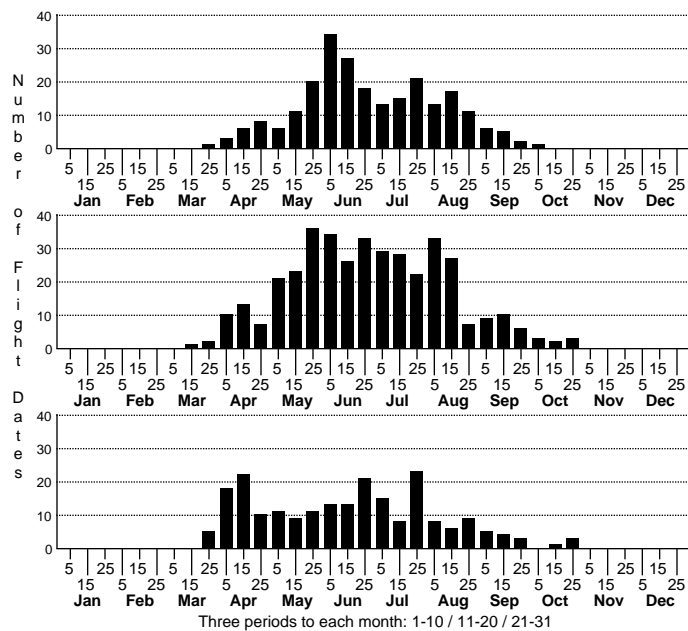
**FLIGHT:** Downstate, the flight occurs from early May to late October; in the mountains, from late May to mid-September.

**HABITAT:** Ponds, small lakes, marshes, and pools are used for breeding. Slow-moving portions of rivers or creeks may be used on occasions.

**BEHAVIOR:** This is an active and conspicuous dragonfly, despite being one of the smallest species. Adults often perch conspicuously on the tips of twigs and grasses, close to water. Adults will forage long distances from water, and they are among the most "urban" of dragonflies, often found in gardens, arboretums, and other places in cities where suitable prey items might occur.

**COMMENTS:** This species is a wasp mimic, with its highly colored wing patches and veins. Adults often obelisk. Females are somewhat similar in coloration to the Halloween Pennant, but the latter species is much larger in size. One would think that a dragonfly whose average length is less than 1" would be difficult to observe and easy to overlook (such as with the Elfin Skimmer), but the Eastern Amberwing is a "unique" species in NC -- there are other amberwings elsewhere -- that seems to want to draw attention to itself, often looking like a butterfly or wasp rather than a dragonfly (at a quick glance).

## *Plathemis lydia* Common Whitetail

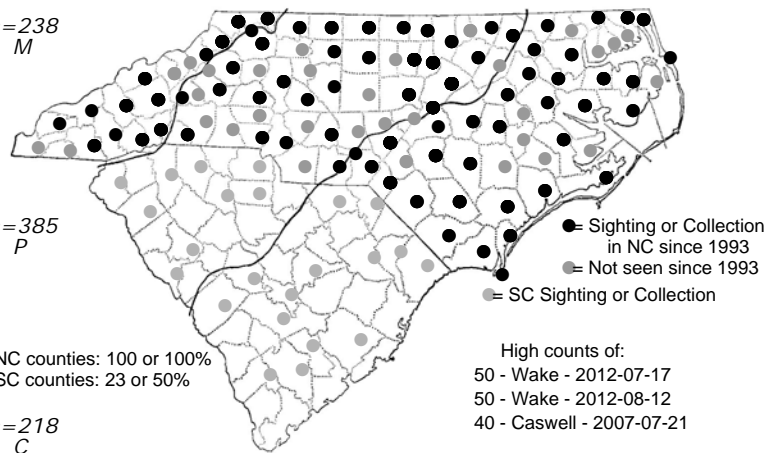


*n*=238  
*M*

*n*=385  
*P*

*n*=218  
*C*

NC counties: 100 or 100%  
SC counties: 23 or 50%



High counts of:  
50 - Wake - 2012-07-17  
50 - Wake - 2012-08-12  
40 - Caswell - 2007-07-21

Earliest date: Durham 1990-03-19  
Latest date: Craven 2011-10-28

Synonym: *Libellula lydia*, *Ladona lydia*

Status		Rank	
NC	US	NC	Global
-	-	S5	G5

**DISTRIBUTION:** Statewide, occurring in all 100 counties.

**ABUNDANCE:** Common to abundant across the state, not seeming to vary considerably in numbers from one province to another. Though seldom occurring large swarms, it is among the most widespread species in terms of habitats from wet to dry, wooded to open.

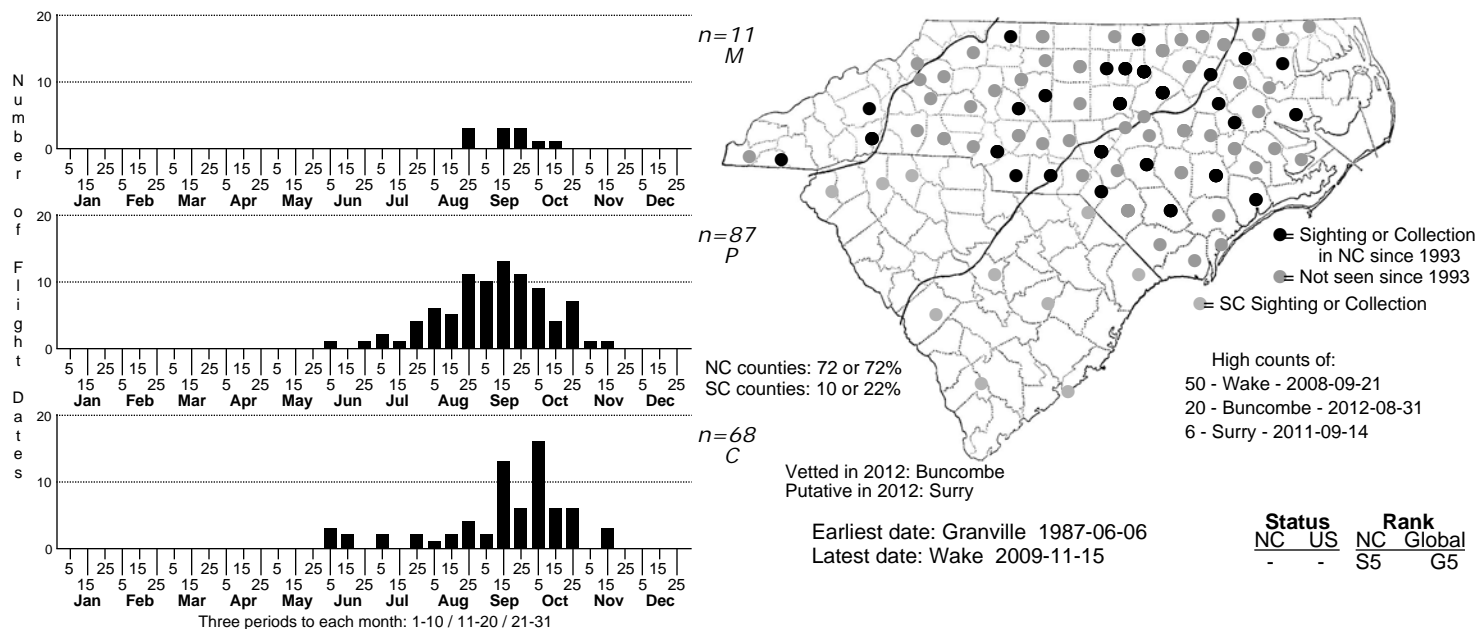
**FLIGHT:** Nearly the entire odonate flight season, from late March to late October.

**HABITAT:** Ponds, lakes, swamps, seeps, pools, and other open water. Probably uses smaller, temporary pools and ditches more than most other dragonflies.

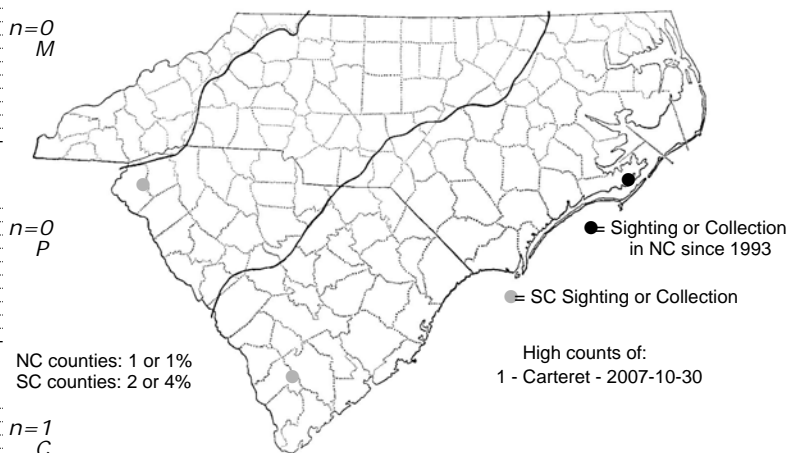
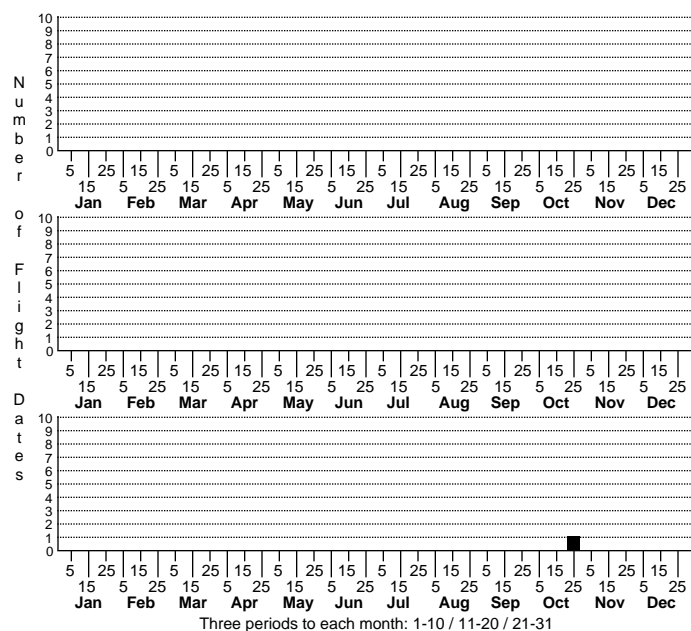
**BEHAVIOR:** Adults commonly perch flat on the ground, especially on mud or other damp ground, such as pond shores, muddy spots in powerline clearings, and so forth. They do perch on twigs and vegetation, but not as frequently as do most other skimmers. They forage well away from water, in fields, woodland borders, powerline clearings, as well as at pond margins, etc.

**COMMENTS:** This may be the most conspicuous or obvious dragonfly in NC, especially to the layman; they are impossible to miss or overlook when present, as they perch on the ground where observers frequently walk. In fact, one quickly tires of them, despite their attractiveness. Though females could be confused with the scarce Twelve-spotted Skimmer, in general this a very easily identified dragonfly.

## *Sympetrum ambiguum* Blue-faced Meadowhawk



# *Sympetrum corruptum* Variegated Meadowhawk



Earliest date: Carteret 2007-10-30  
Latest date: Carteret 2007-10-30

Status	Rank
NC US	NC Global
- -	SA G5

**DISTRIBUTION:** Migrant in the southern Atlantic Coast states. Perhaps resident east to western TN and the panhandle of FL. Accidental or stray to NC, where the only record known to us is one photographed in Carteret County in 2007.

**ABUNDANCE:** Stray; casual or accidental. GA has a few records, and NC, SC, and VA have at least one each.

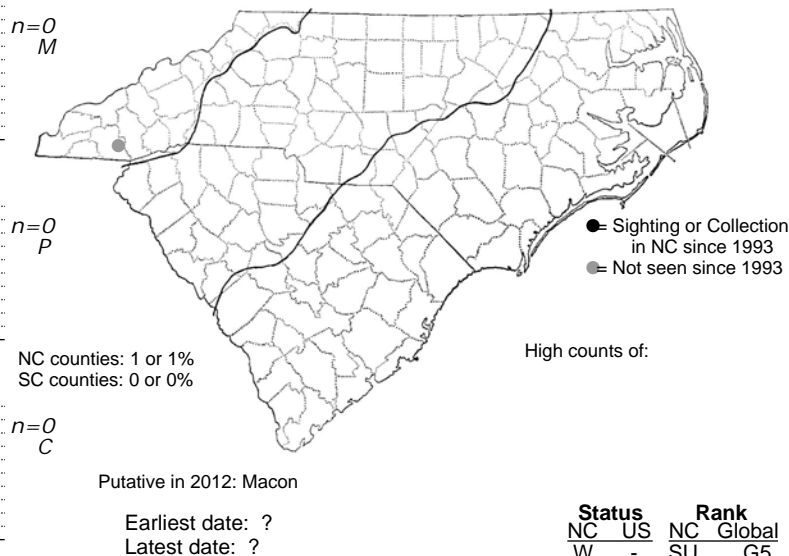
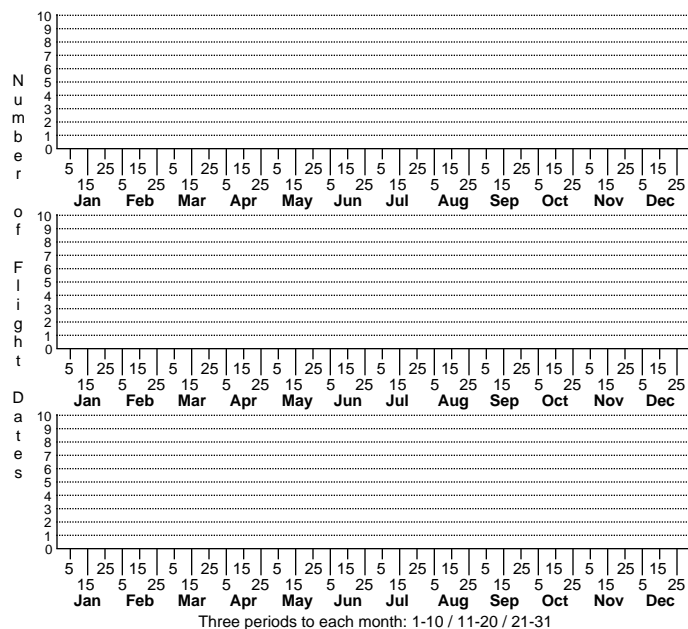
**FLIGHT:** Probably most likely to occur in late summer or fall. The only NC date available is 30 October.

**HABITAT:** Breeds at ponds and slow portions of streams. A stray to the East Coast, such as this species, could be seen practically anywhere, especially in coastal habitats. The one found in 2007 in NC was in dune habitat along a barrier island.

**BEHAVIOR:** As the species is presumed to be a migrant, it could theoretically be seen anywhere in the state. The adults perch fairly low to the ground, and sometimes even on the ground.

**COMMENTS:** This species is reported for NC in the IORI website checklist prepared by Bick and Mauffray (1999-2004). However, Cuyler's unpublished data contains no records for the species for NC. Fortunately, Randy Newman photographed one at Fort Macon State Park in fall 2007 for the first definitive record, though we assume there must be an older record/report prior to 2004. At any rate, the species is a stray to the East Coast.

# *Sympetrum internum* Cherry-faced Meadowhawk



**DISTRIBUTION:** This is a Northern and Midwestern species, ranging generally south to VA and KY. There is a report/record from Macon County listed in Odonata Central. No data, other than coordinates, are provided. The range map as shown in Paulson (2011) does extend down into NC to include this area.

**ABUNDANCE:** Presumed very rare, if it truly occurs in NC.

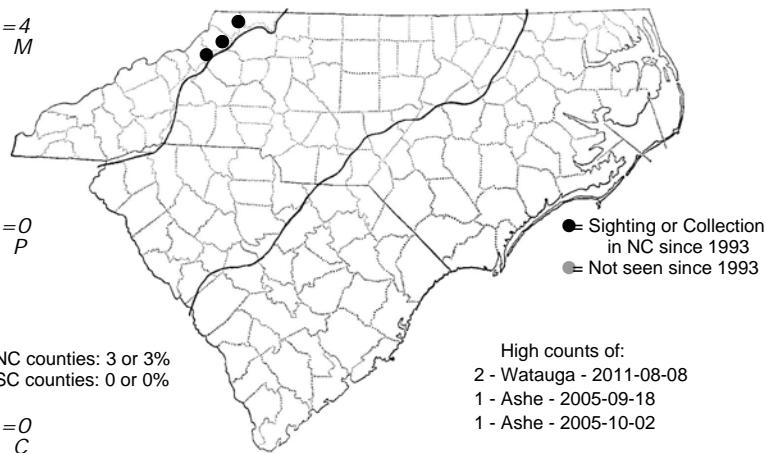
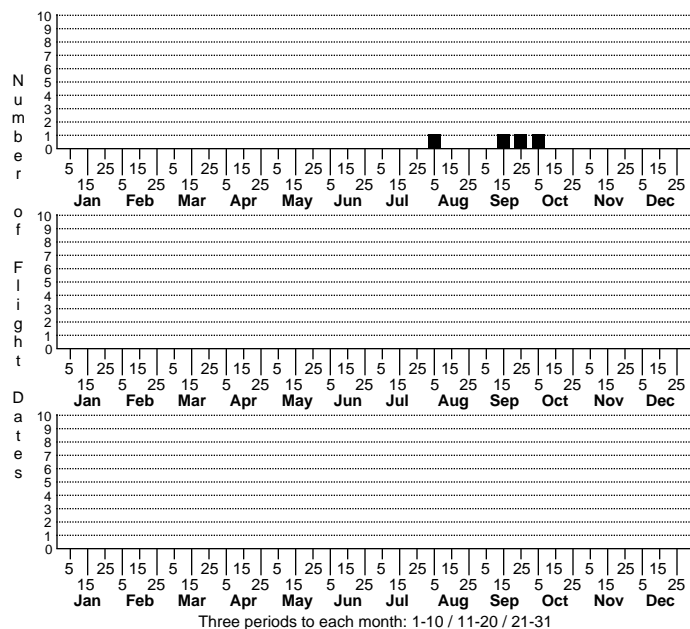
**FLIGHT:** Probably June into September or October.

**HABITAT:** Marshy edges of lakes, ponds, and other open wet areas.

**BEHAVIOR:** Probably like other meadowhawks.

**COMMENTS:** It is very unfortunate that the report in Odonata Central has no observer/photographer/collector name, no date, and no other information, to let readers know if the report is legitimate. However, the website does say that the record has been "vetted", thus approved by an expert. Nonetheless, all previous checklists for NC did not include this species; thus, it might be assumed that the report is recent (2005 or later). The NC Natural Heritage Program has added the species to its Watch List in 2012. If the data become available, as this species is not considered to be a migrant, it might be moved over to the Rare List.

# Sympetrum obtrusum White-faced Meadowhawk



Earliest date: Watauga 2011-08-08  
Latest date: Ashe 2005-10-02

Status	Rank
NC US	NC Global
SR -	S1 G5

**DISTRIBUTION:** One of many far Northern meadowhawks, this species' southern end of the range barely reaches NC, where limited to the extreme northern mountains. Records only for Ashe, Watauga, and Avery counties.

**ABUNDANCE:** Presumed rare in the very limited portion of the range, though it has been found in recent years in each of the three counties within the known range.

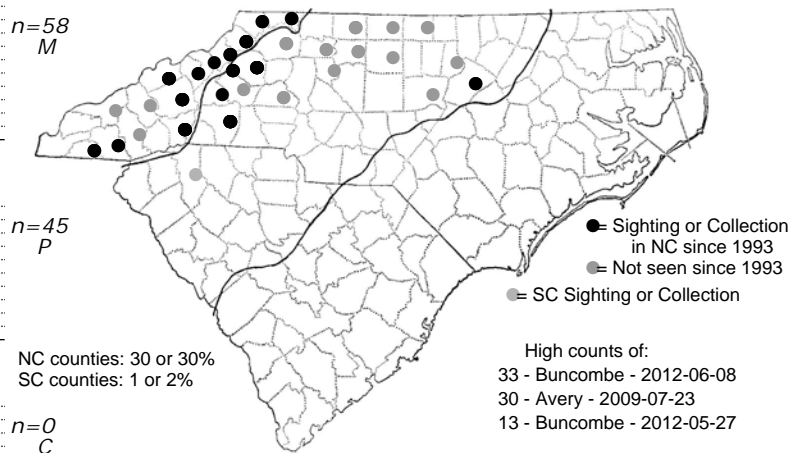
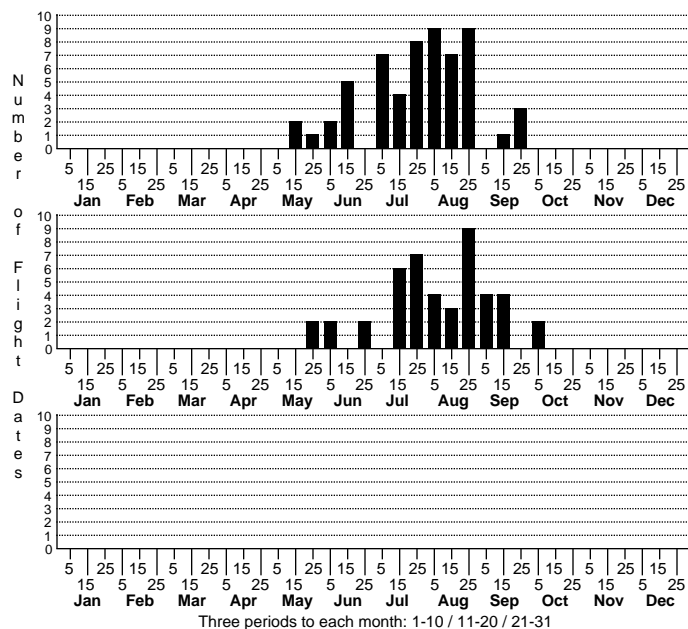
**FLIGHT:** Mid-summer to fall only, with the NC records from 8 August to 2 October.

**HABITAT:** Still or slow-moving water of lakes, ponds, slow sections of streams, marshes, and bogs.

**BEHAVIOR:** Adults forage in nearby fields or clearings near water, perching on the tips of grasses and forbs.

**COMMENTS:** Males have intense red abdomens and a white face, rendering them very striking. However, Ruby Meadowhawk males are also bright red, though their face is not white. Ted Wilcox has provided several excellent photos from Ashe County, which provided a new county record; Curtis Smalling photographed one in 2011 from Watauga County; and Ed Corey added an Avery County record in 2008. Duncan Cuyler's database has a record just for Watauga County.

## *Sympetrum rubicundulum* Ruby Meadowhawk



Putative in 2012: Swain

Earliest date: Buncombe 2012-05-11  
 Latest date: Wake 2006-10-05

Status		Rank	
NC	US	NC	Global
-	-	S4	G5

**DISTRIBUTION:** Throughout the mountains and foothills of the Piedmont, and also present in the northern half of the Piedmont; records south to Wake, Chatham, Davie, and Rutherford counties. Apparently absent from the southeastern portion of the Piedmont and all of the Coastal Plain.

**ABUNDANCE:** Fairly common, to locally common, in the mountains; uncommon in the foothills, but rare in the northern Piedmont east to Caswell and Guilford counties, and apparently very rare east to Wake County. Surprisingly there seems to be only one recent record for the Piedmont east of the foothills, suggesting a population decline there.

**FLIGHT:** Unlike most other meadowhawks, this species flies mainly in summer. The mountain flight occurs from mid-May to late September. The Piedmont flight is similar -- late May to early October.

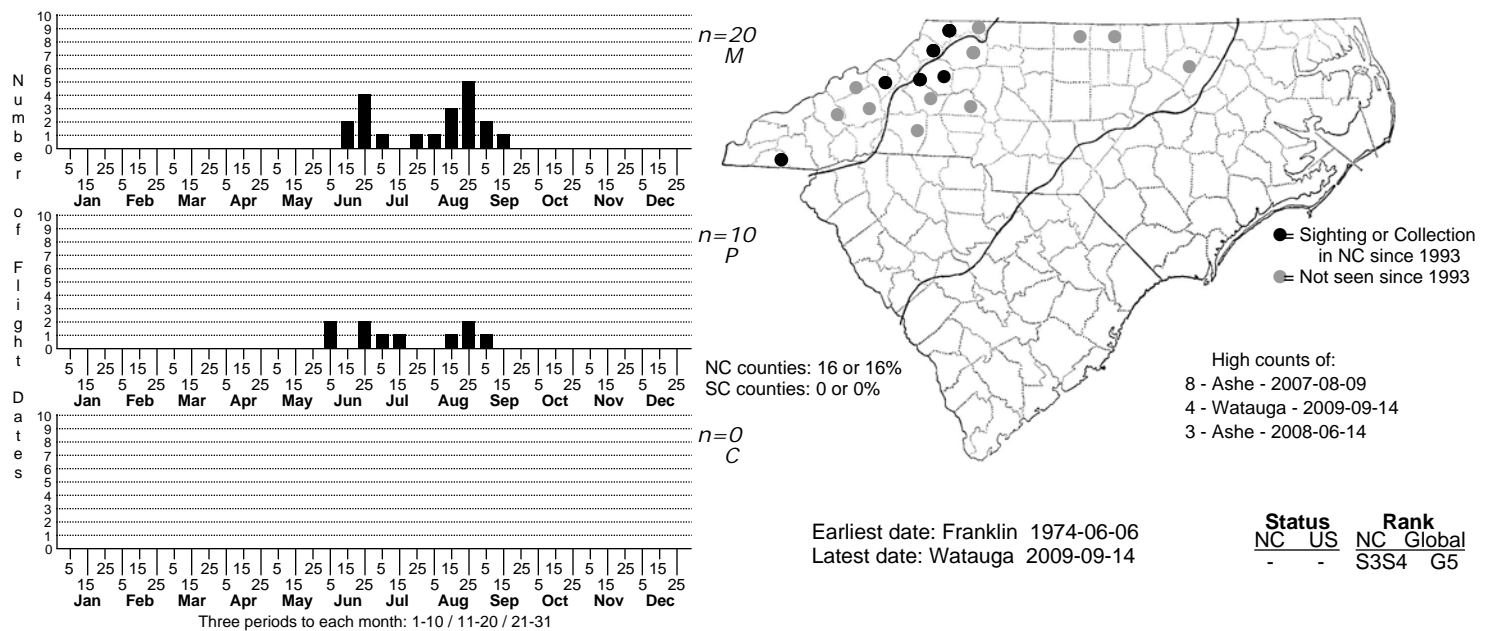
**HABITAT:** Mainly breeds at temporary pools and ponds, marshes, and other small bodies of water.

**BEHAVIOR:** Adults forage away from these small pools, perching on twigs and other vegetation, often fairly low.

**COMMENTS:** Considering the bright red color of the males, its habit of perching in somewhat conspicuous places, and its flight in the middle of the season when many people are out looking for odonates, the species is only infrequently reported away from the mountains, thus "corroborating" that it is definitely not a numerous dragonfly in most of the Piedmont. In this latter region, it is clearly outnumbered by the Autumn and Blue-faced meadowhawks. Fortunately, it can be quite numerous in the mountains, and there are a few daily counts there of at least 30 individuals.



## *Sympetrum semicinctum* Band-winged Meadowhawk



**DISTRIBUTION:** This is another Northern meadowhawk, but its range extends southward in the mountains to northern GA. In NC, it is found mainly in the mountains and foothills of the Piedmont, but there are a few records in the northern Piedmont away from the mountains (Rockingham, Caswell, and Franklin counties).

**ABUNDANCE:** Uncommon in the mountains, though probably rare in the southern counties; rare in the Piedmont foothills; very rare east of the foothill ranges in the northern Piedmont. We have no recent reports from east of the mountains/foothills.

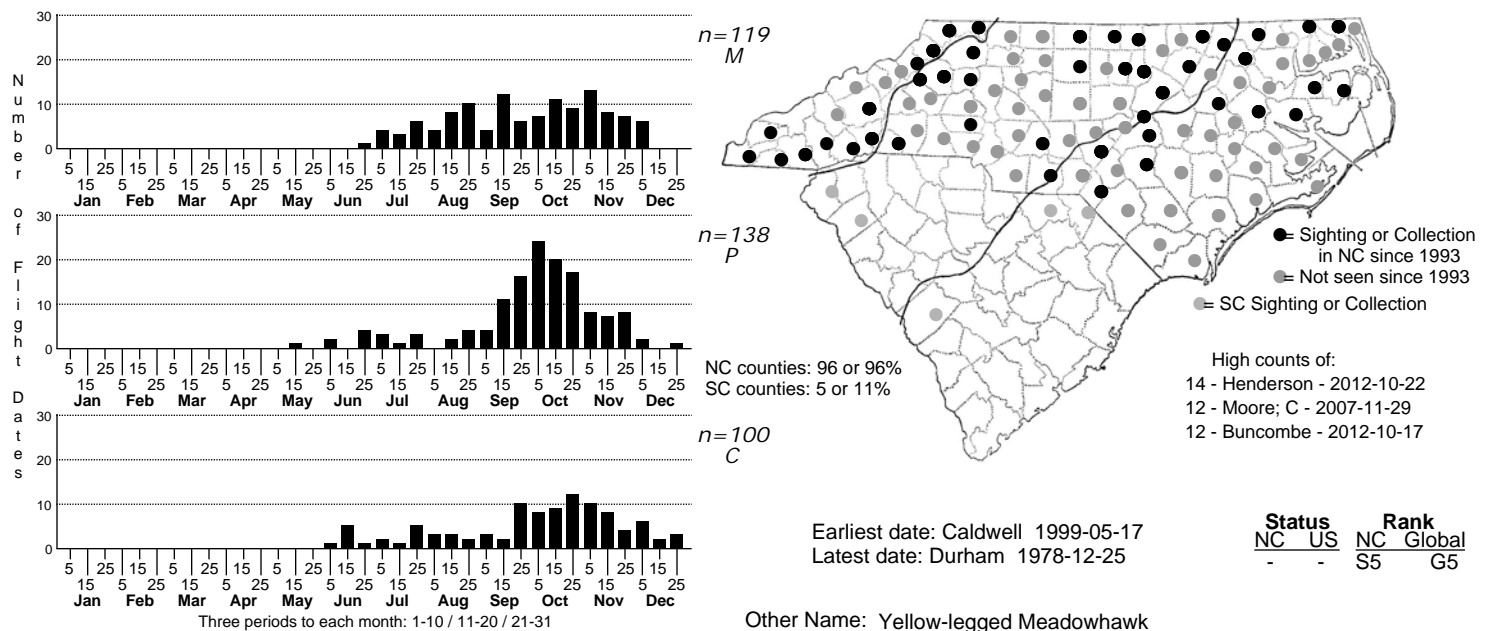
**FLIGHT:** Mid-June to mid-September in the mountains; early June to early September in the Piedmont.

**HABITAT:** Unusual for most dragonflies, it favors marshes, bogs, and wet meadows for breeding.

**BEHAVIOR:** Adults forage from tips of grasses and sedges in or very close to marshes and bogs.

**COMMENTS:** Because this species seems to be tied to a fairly limited and specific habitat -- marshes, wet meadows, and bogs -- it can be specifically searched for. As the basal half of each wing is sooty in color, coupled with the dull reddish abdomen, the male is quite unmistakable. It is more widespread in the mountains than is the White-faced Meadowhawk, which also can occur in cool/cold bogs, marshes, and other open wetlands.

## *Sympetrum vicinum* Autumn Meadowhawk



**DISTRIBUTION:** Statewide, with records for all but four counties. Probably scarce on the Outer Banks and the eastern "Pamlico" Peninsula -- no records yet for Hyde and Dare counties.

**ABUNDANCE:** Fairly common and widespread across the state, seemingly somewhat similar in abundance in each of the three provinces. Clearly the most numerous of the meadowhawks in NC. Even so, it does not occur in large numbers, and our peak one-day counts are still only in the low teens.

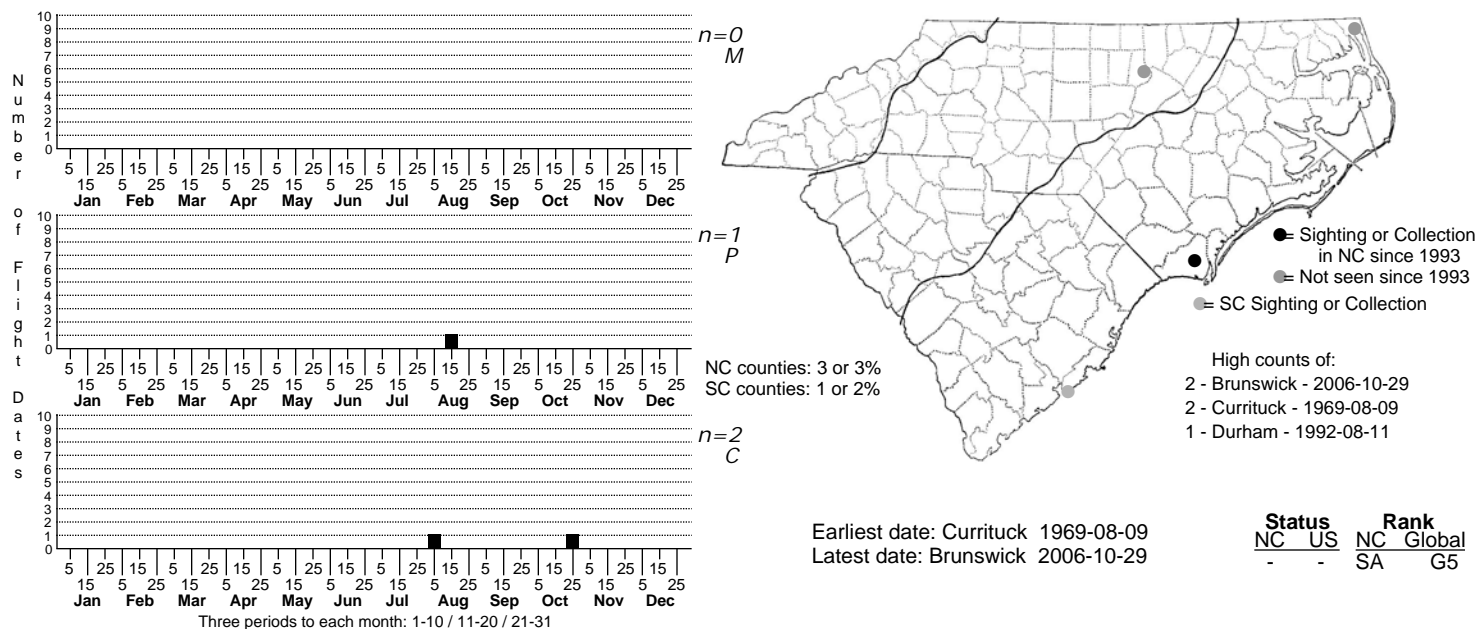
**FLIGHT:** Flies from early or mid-June into December, and there is even a record for 25 December! The mountain flight starts somewhat later, in late June. It is the most frequently seen species in November and December, and the bulk of its flight takes place in fall -- September into November.

**HABITAT:** Still waters of ponds, marshes, and slow creeks, typically in wooded or semi-shaded places.

**BEHAVIOR:** Adults are frequently seen in fields, powerline clearings, and woodland borders in the fall, often perching on the tips of grasses or forbs or twigs. However, it is a fairly small species and can easily be overlooked.

**COMMENTS:** This species was formerly called the Yellow-legged Meadowhawk, until the common name was changed several years ago. Both common names -- Yellow-legged and Autumn -- are suitable, though other meadowhawks fly in the autumn. Of all of the numerous dragonflies in NC, this is probably the one that observers don't see their first individual until September or even October. Females and immatures are a dull amber/yellow, matching the color of dead grasses, rendering them hard to spot, particularly as they average only 1.0 - 1.4" in length.

## *Tramea calverti* Striped Saddlebags



**DISTRIBUTION:** Breeds north only to the southern half of TX. However, it strays somewhat regularly to the East Coast of the United States. There are records for at three NC counties -- Durham, Currituck, and Brunswick.

**ABUNDANCE:** Casual stray to the coast of NC. Accidental inland (Durham County).

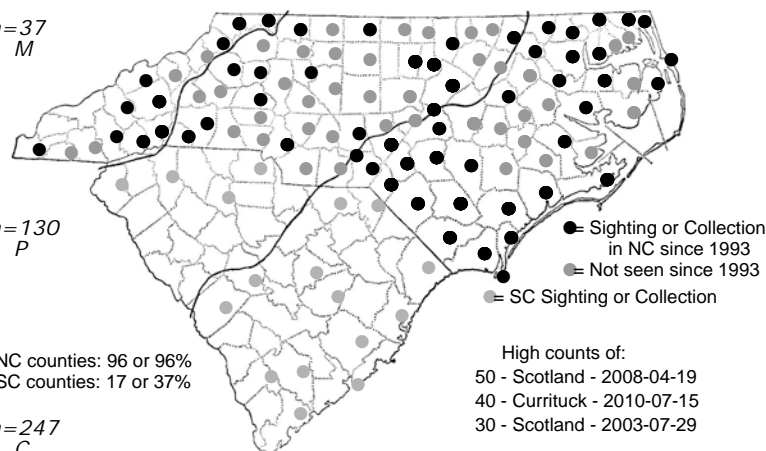
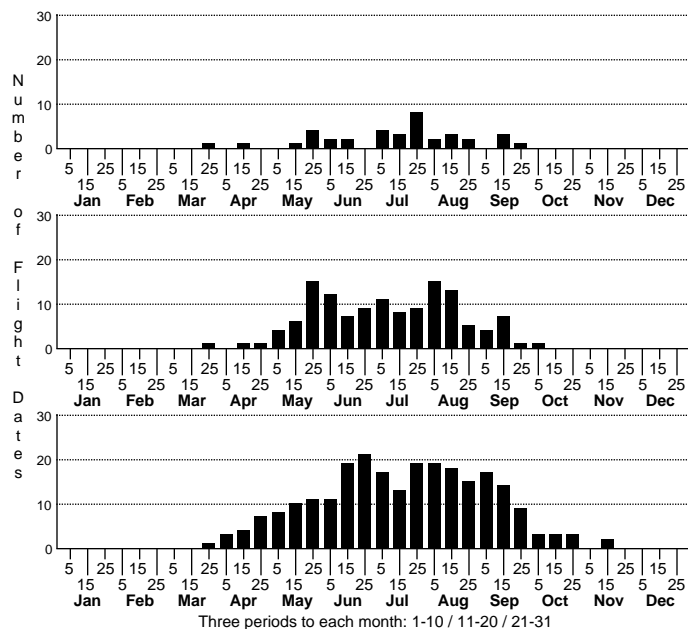
**FLIGHT:** Late summer and fall. The NC records are for 9 August (Currituck), 11 August (Durham), and 29 October (Brunswick).

**HABITAT:** In NC, the species can occur anywhere, primarily near the coast, as it is a stray.

**BEHAVIOR:** As with other saddlebags, adults spend most of the time in flight, perching infrequently. They often hover or glide, with seemingly little effort. The individual seen in Brunswick County acted like a Carolina Saddlebags or Wandering Glider, flying mainly over head height, with much gliding.

**COMMENTS:** This is a very rare migrant/stray. Harry LeGrand, Jeff Pippen, and Ricky Davis saw one on 29 October 2006 at a golf course just north of Calabash. Fortunately, it perched briefly, and Pippen and Davis got recognizable photos to document the record. Duncan Cuyler is responsible for the other records, collecting one in Durham County and two in Currituck County.

## *Tramea carolina* Carolina Saddlebags



Vetted in 2012: Henderson  
Putative in 2012: Watauga, Madison

Earliest date: Pender 2008-03-26  
Latest date: New Hanover 2005-11-12

Status	Rank
NC US	NC Global
- -	S5 G5

Other Name: test

**DISTRIBUTION:** Statewide, with only four counties (three in the mountains) lacking records. Obviously occurs in all 100 counties.

**ABUNDANCE:** Common and widespread in the Coastal Plain and Piedmont, and can be very common at times in the Coastal Plain; fairly common in the mountains.

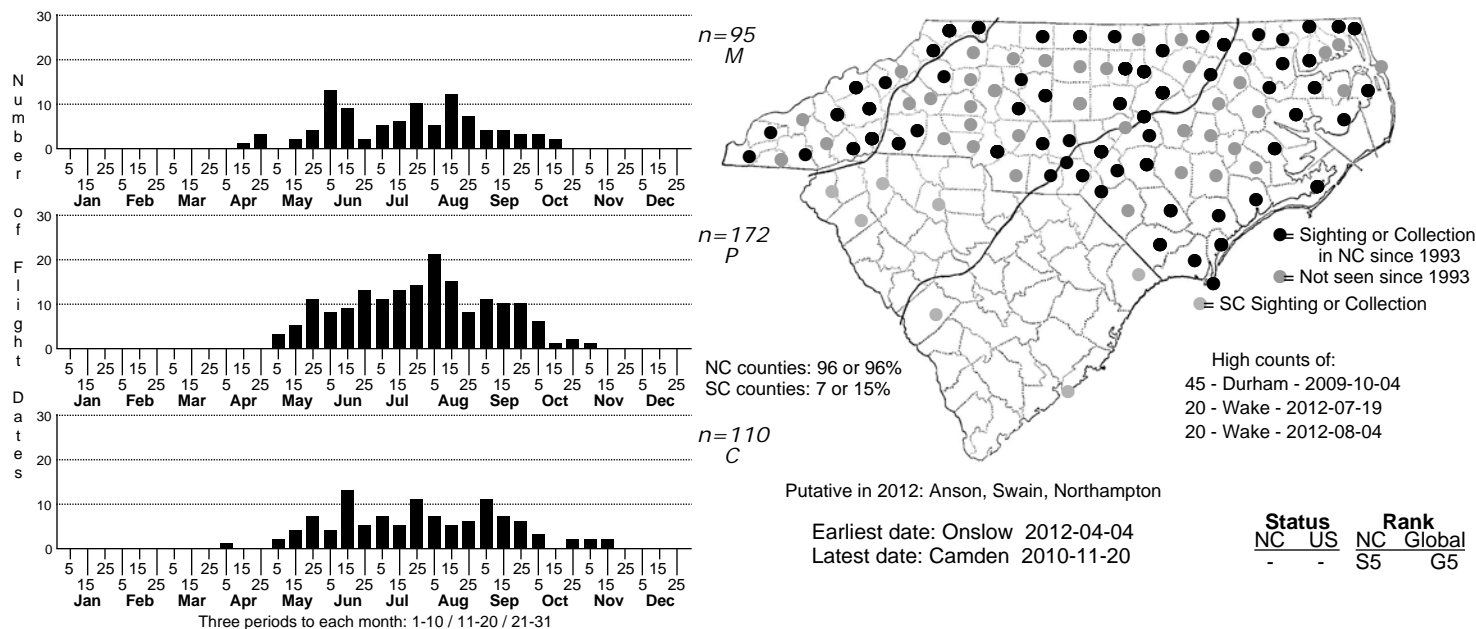
**FLIGHT:** In the Coastal Plain, it flies almost throughout the odonate flight season -- very late March to mid-November; however, not numerous in the spring. In the Piedmont, it also begins in late March, but the latest date is just early October. In the mountains, it has also been seen as early as late March, but the last date is in late September.

**HABITAT:** Breeds at ponds, lakes, marshes, and other open, still waters.

**BEHAVIOR:** Males are often seen flying over ponds and lake margins, usually higher above water than other species, and perching on twigs farther from shore than most species. Adults are most frequently seen in gliding flight well above head height, typically 8-15' off the ground, usually over open country. They seemingly can stay airborne for an hour or longer, and observers often get impatient waiting for such an individual to come to a perch.

**COMMENTS:** This and the Black Saddlebags are frequently seen gliding over one's head when an observer is walking near the beach, or in a field, or in an open garden, or near a large pond. The two can be difficult to distinguish until they appear in front of a dark background and the observer can see the abdomen color (or the large pale abdomen spot of the Black Saddlebags). This species is partially migratory, as large numbers can at times be seen along the coast in fall.

## *Tramea lacerata* Black Saddlebags



**DISTRIBUTION:** Essentially statewide, with only four counties lacking records. Certainly present in all 100 counties.

**ABUNDANCE:** Common across the state, with abundance seemingly quite similar in each province. Statewide abundance is slightly less than that of the Carolina Saddlebags, but there are many more records of Blacks for the mountains than there are for Carolinas. (The Carolina outnumbers the Black in the Coastal Plain.)

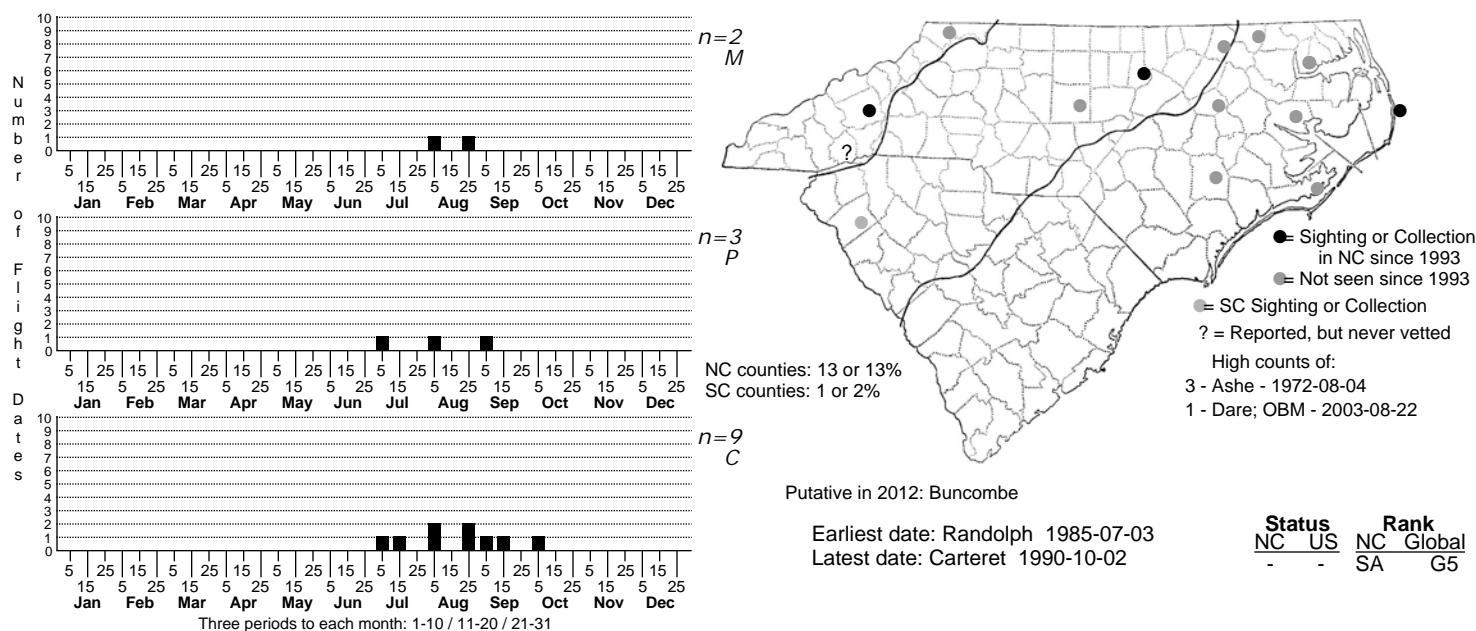
**FLIGHT:** In the Coastal Plain, it ranges from early April (scarce before June) to mid-November. The Piedmont flight is from early May (if not earlier) to early November; the mountain flight is from mid-April to mid-October, but it is scarce in the spring.

**HABITAT:** Ponds, lakes, marshes, and other still water in open places.

**BEHAVIOR:** Essentially the same as for Carolina Saddlebags. Usually seen in flight -- gliding or slowly flapping -- about 8-15' feet above ground, seldom coming to a perch.

**COMMENTS:** If one were not aware that Black Saddlebags and Carolina Saddlebags were different species, an observer might think that Blacks are females of Carolina Saddlebags, as the two species tend to be the same size, often fly together, and are similar in abundance. Exactly what micro-habitat, food items, etc., differentiate these two is not obvious. As with the Carolina, some individuals along the coast are probably migrants, but it is not nearly as numerous a fall migrant along the coast as is the Carolina.

## *Tramea onusta* Red Saddlebags



**DISTRIBUTION:** Confusing. A few references indicate that NC lack records; Paulson (2011) states that there are "no North Carolina records". The Odonata Central database gives only a single record -- a photograph from Dare County in 2003 from Pea Island NWR. Several other unconfirmed reports have appeared in the literature. The University of Florida database, containing thousands of specimens from Duncan Cuyler, actually gives a stunning ten county records for Red Saddlebags! Are all of these specimens correctly identified (i.e., are not the very similar Carolina Saddlebags)? All that we can say is that the species is a stray to NC, of uncertain rarity.

**ABUNDANCE:** Presumed very rare or accidental stray. However, as it looks very similar to Carolina Saddlebags, most people would easily overlook the species.

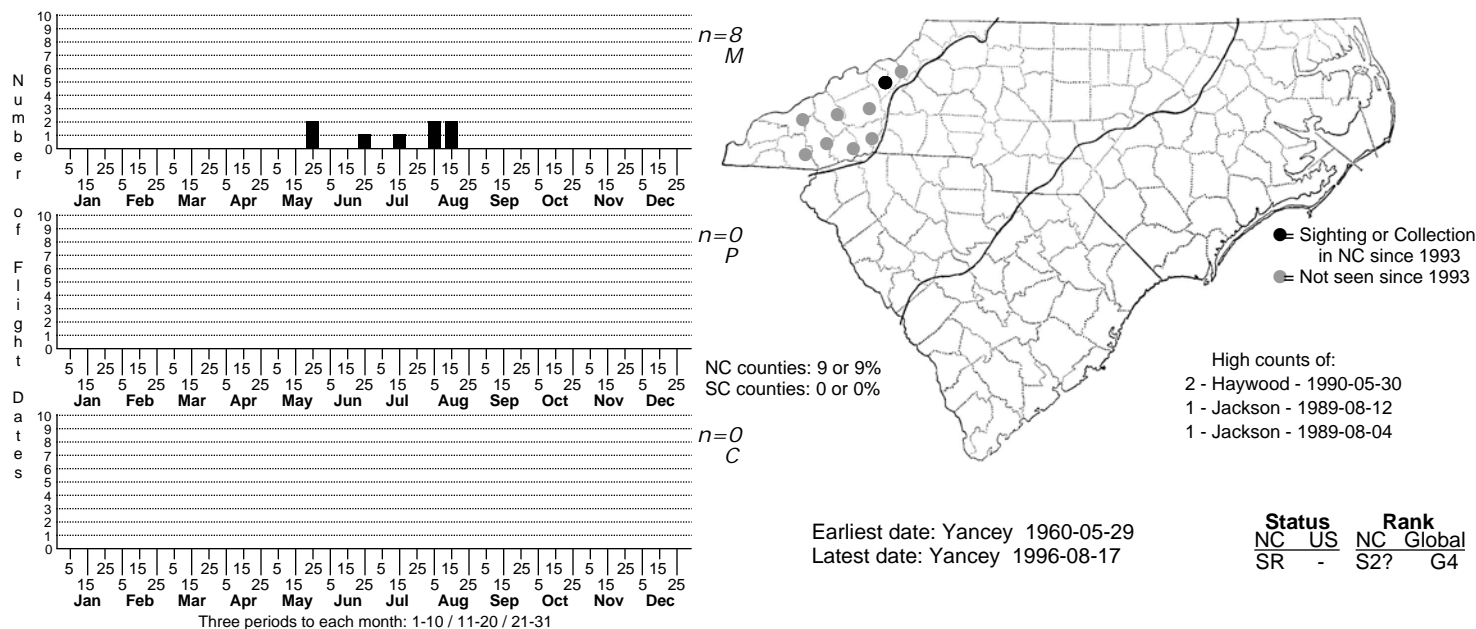
**FLIGHT:** Presumably only in summer and fall. The collection records, if correct, fall between 3 July and 2 October.

**HABITAT:** Not known for NC, as it does not breed here.

**BEHAVIOR:** Probably similar to other saddlebags.

**COMMENTS:** No species in the state has more confusing data and status than the Red Saddlebags. Is it a not-so-rare stray, easily overlooked amid the common Carolina Saddlebags, or is it truly accidental or casual? For example, we have an array of disparate statuses -- from claims that there are no records for the state, to a maximum of 13 county records (as shown on this range map). It is possible that many or most of these 13 county records are incorrect, or at least need re-examination of the specimens or data. This would be a difficult species to separate from the common Carolina Saddlebags through binoculars or the naked eye. However, the Red has a smaller hind wing patch, a somewhat duller red abdomen (despite the common name), and several other characters. Unraveling this mystery might take a few years, if ever!

## *Calopteryx amata*    Superb Jewelwing



**DISTRIBUTION:** The southern two-thirds of the mountains, if not the entire mountain region. The range map in Paulson (2011) shows that this region is a southerly disjunct area from central WV, with apparently no records for western VA. Thus, this Northeastern species might truly be missing from the northern counties of the NC mountains.

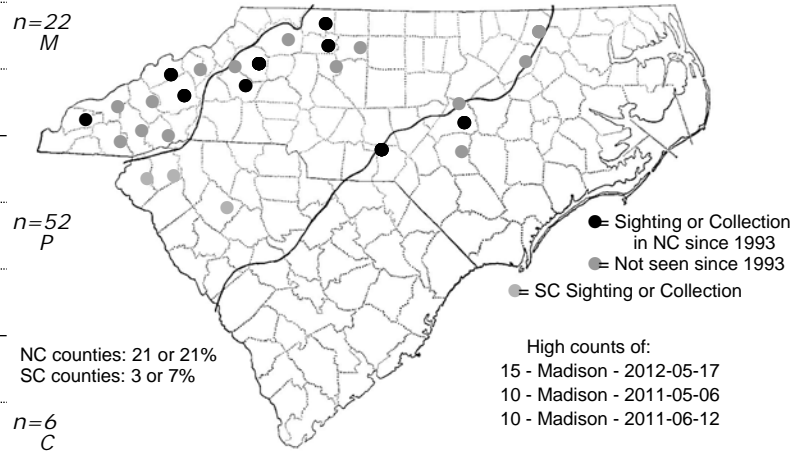
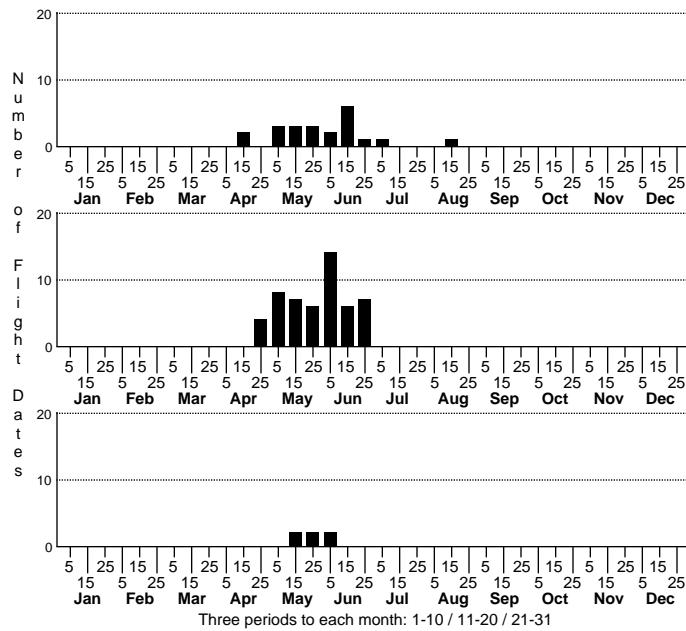
**ABUNDANCE:** Rare. Probably overlooked, as well, as most of the records are over 25 years old. Even though there are collection records for 9 of the roughly 17 true mountain counties, we have only 8 records with flight dates, and the peak one-day count appears to be only two individuals. Because its habitat is quite widespread, there is no reason to suspect a decline in the population in the state.

**FLIGHT:** The meager flight data indicate a flight period (at a minimum) of late May to mid-August.

**HABITAT:** Small, rocky streams in wooded areas.

**COMMENTS:** The NC Natural Heritage Program considered this as a Watch List species in 2010. However, as there are so few recent data, and relatively few records overall, that Program elevated the species to the Rare List in fall 2012.

# *Calopteryx angustipennis* Appalachian Jewelwing



NC counties: 21 or 21%  
SC counties: 3 or 7%

High counts of:  
15 - Madison - 2012-05-17  
10 - Madison - 2011-05-06  
10 - Madison - 2011-06-12

Putative in 2012: Graham, Swain

Earliest date: Madison 2012-04-12  
Latest date: Jackson 1989-08-12

Status	Rank
NC US	NC Global
- -	S3S4 G4

**DISTRIBUTION:** Essentially throughout the mountains and Piedmont foothills, and probably throughout the Piedmont, barely into the western edge of the Coastal Plain/Sandhills. There is an odd gap in records in the central and eastern Piedmont counties, which have been fairly well worked -- especially the Triangle area (Wake, Durham, and Orange counties).

**ABUNDANCE:** Uncommon to locally fairly common (several daily counts of 10-15), in the mountains. Probably uncommon in the northwestern Piedmont, but very rare eastward, with no recent records east of Surry and Yadkin counties. Very rare to locally absent (?) in the central and eastern Piedmont and western edge of the Coastal Plain.

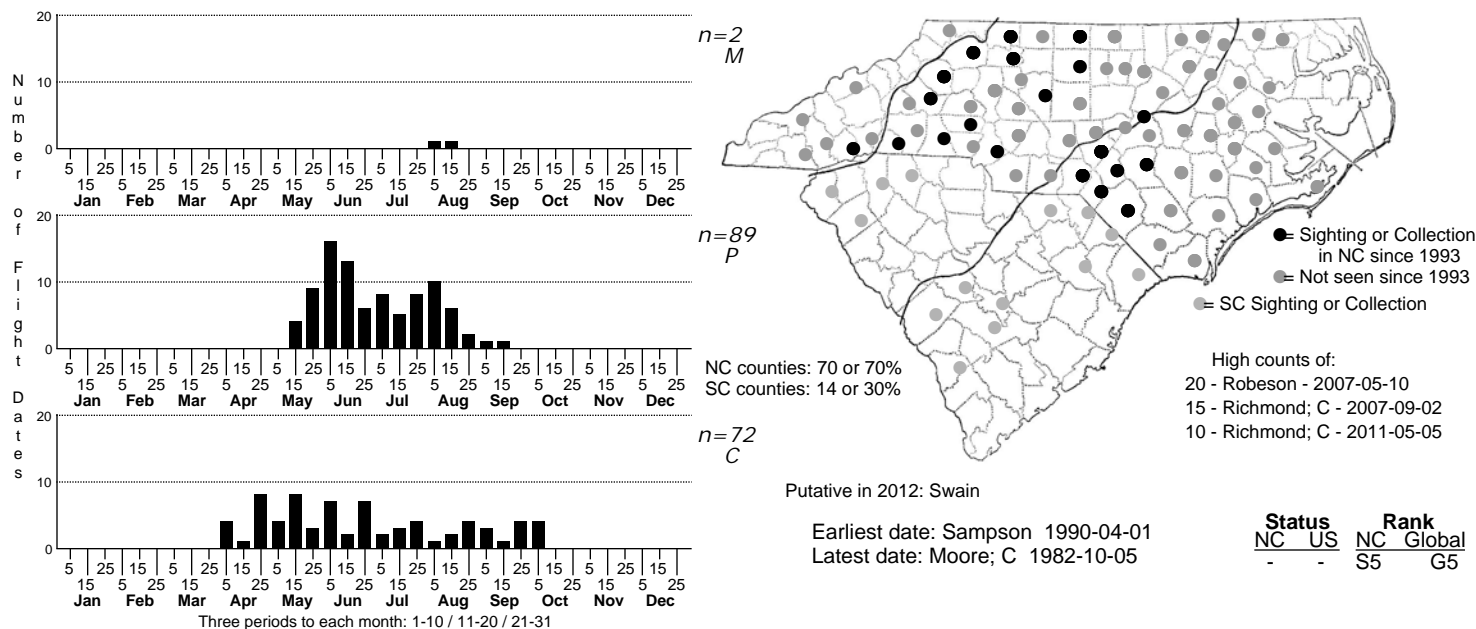
**FLIGHT:** Mainly mid-April to mid-August, at least in the mountains, and probably also in the Piedmont. However, records downstate are only from late April to late June.

**HABITAT:** Rivers and large streams, usually where rocky and with moderate current.

**COMMENTS:** The gap in the range in the Piedmont is most unusual, and might actually be real, as there has been much odonate field work conducted in the eastern half of the Piedmont. Any records east of the western Piedmont are greatly needed to clarify this range.



## *Calopteryx dimidiata* Sparkling Jewelwing



**DISTRIBUTION:** Nearly statewide, but seemingly absent from the northeastern third of the Coastal Plain -- the "Pamlico Peninsula" and the counties north of Albemarle Sound. Of spotty occurrence in the mountains, but likely present in all counties there except perhaps ones lacking low elevations (e.g., Yancey, Mitchell, Avery, Watauga).

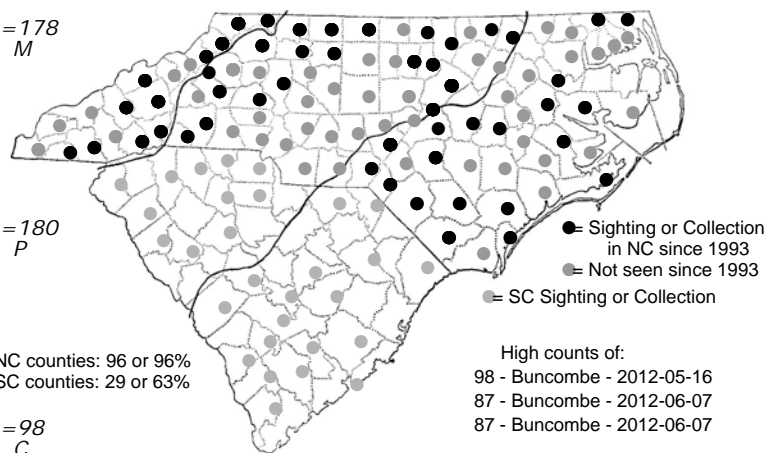
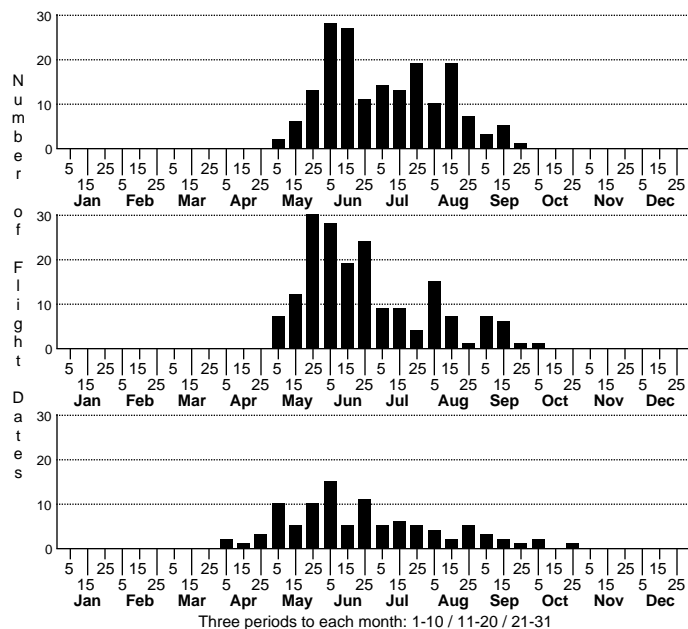
**ABUNDANCE:** Fairly common to locally common throughout the Piedmont and the western Coastal Plain, except for the northeastern third of the latter province, where rare to absent. Probably uncommon in the central Coastal Plain. It seems to be slightly more numerous in the Sandhills than elsewhere, but it is not hard to find in the Piedmont. Very rare in the mountains.

**FLIGHT:** Early April to early October in the Coastal Plain, but so far just from mid-May to mid-September in the Piedmont. Though there are at least seven counties with records for the mountains, we have flight data only for early and mid-August.

**HABITAT:** Small streams, generally where fast-flowing and acidic, and not necessarily in forested areas.

**COMMENTS:** Range maps in Paulson (2011) and Beaton (2007) show all of NC within the range of the species. This may be generous and "broad-brush", as it appears to be truly absent in northeastern NC and maybe absent in some of the northern mountain counties. The species is surprisingly rare in the mountains, considering its relative numbers in the Piedmont.

## *Calopteryx maculata* Ebony Jewelwing



Earliest date: Sampson 1990-04-01  
Latest date: Brunswick 1971-10-27

Status		Rank	
NC	US	NC	Global
-	-	S5	G5

**DISTRIBUTION:** Statewide, lacking records only in four far eastern counties, though likely present in all 100 counties.

**ABUNDANCE:** Very common (to locally abundant) across the state, except less numerous in the eastern Coastal Plain. Seemingly rare in counties surrounding Albemarle Sound, and perhaps absent on the Outer Banks. One of the most abundant odonates in the mountain province.

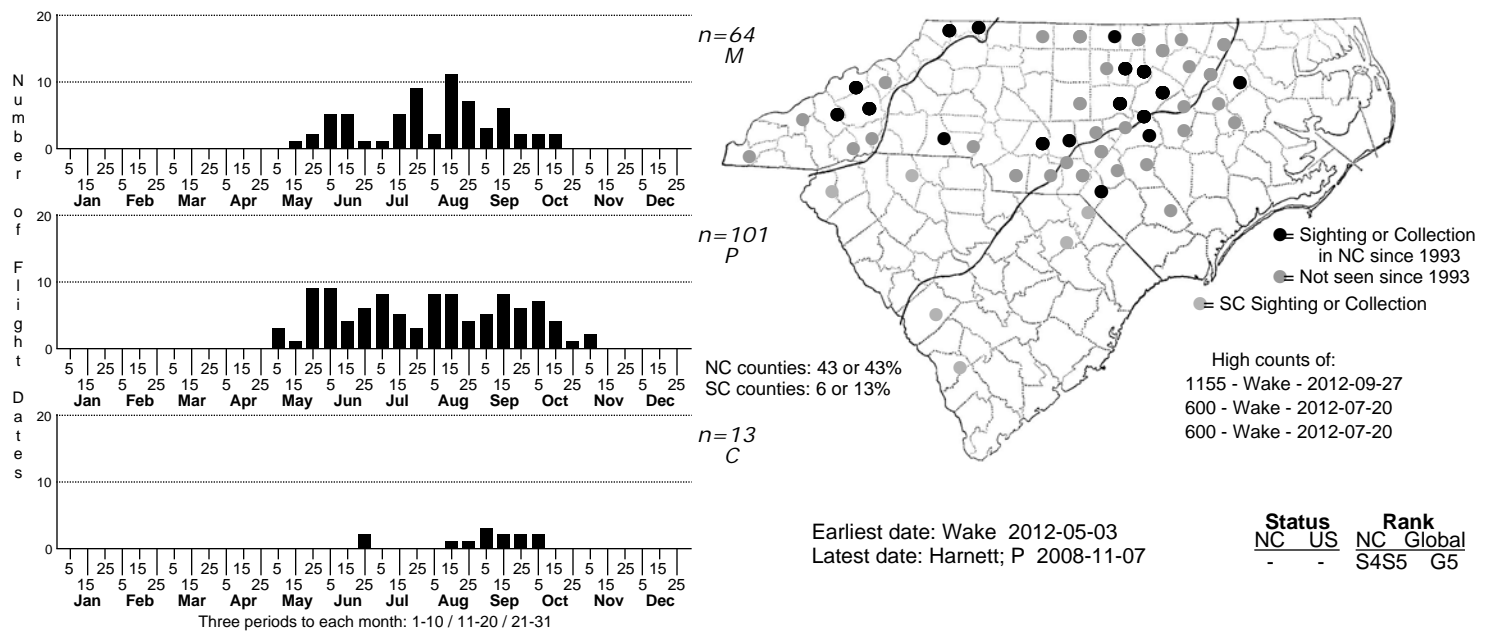
**FLIGHT:** Early April to late October in the Coastal Plain; early May to early October in the Piedmont, and to late September in the mountains.

**HABITAT:** A wide variety of stream habitats, but most common along small forested streams.

**BEHAVIOR:** Where present, easily seen flitting slowly amid vegetation close to a stream, usually in shade or in small openings inside a forest.

**COMMENTS:** This is, by far, our most commonly seen member of the Family Calopterygidae (Broad-winged Damselflies), and it is also one of the most obvious and easily identified of all of our damselflies.

## *Hetaerina americana* American Rubyspot



**DISTRIBUTION:** Throughout the mountains, presumably throughout the Piedmont, and the western third of the Coastal Plain, including the Sandhills. Absent from the eastern 60-65% of the Coastal Plain; absence of records from much of the western Piedmont is likely due to poor survey coverage.

**ABUNDANCE:** Common to locally abundant in the mountains, and also in the eastern Piedmont, near the Fall Line. Seemingly quite rare in the western half of the Piedmont, for unknown reasons. Also, rare (or very uncommon) in the western Coastal Plain/Sandhills.

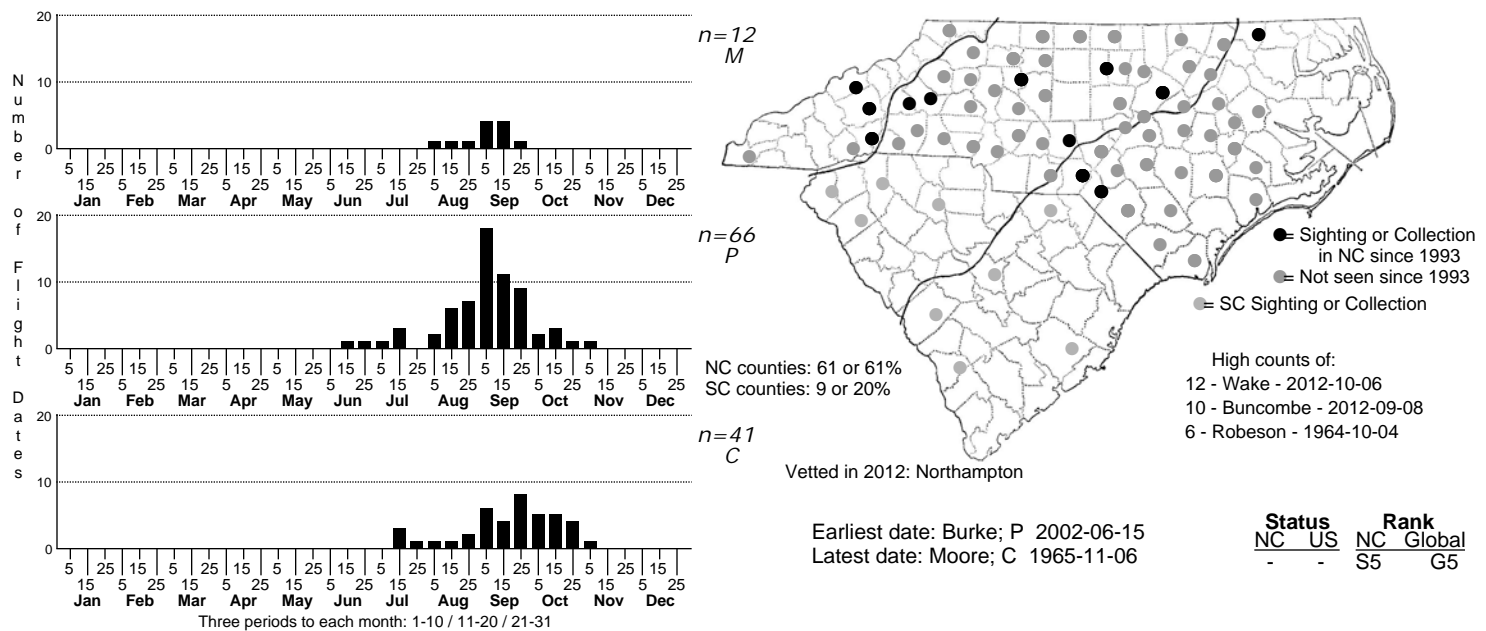
**FLIGHT:** Early May to early November in the Piedmont; apparently slightly shorter flight period in the mountains -- mid-May to mid-October. Coastal Plain flight period probably is similar to that of the Piedmont, though currently we have flight dates only from late June to early October.

**HABITAT:** Rocky streams and rivers, generally where clear and with moderate current.

**BEHAVIOR:** Typically seen perched on rocks or stems/twigs very close to the river or large stream, often in somewhat open/sunny conditions.

**COMMENTS:** There are a number of daily counts over 75 individuals, and a few over 500 individuals; yet the range is rather puzzling. Some of these high counts are close to the Fall Line, and others are in the mountains. Yet, how can there be no records at all, much less counts of over 10 individuals, from any foothills county or other counties nearby in the Piedmont? It would seem that there are plenty of suitable rocky streams and rivers in this area. This species is one of the larger and more beautiful of the damselflies, with the deep red/crimson color of the thorax and wing bases of the adult males being quite spectacular in sunlight.

## *Hetaerina titia* Smoky Rubyspot



**DISTRIBUTION:** Present essentially throughout the mountains and Piedmont, and the southern and western Coastal Plain; apparently absent from the eastern third of the Coastal Plain. No records yet east of Northampton, Pitt, and Onslow counties. Of scattered occurrence in the mountains -- records only for 1/3rd of the counties -- but likely present in all 17 counties there, as the distribution covers counties from the VA state line to the GA state line.

**ABUNDANCE:** Uncommon over its range in the state. Locally fairly common at a few sites in the western Coastal Plain/Sandhills, even though the two highest one-day counts are for the eastern Piedmont and the mountains.

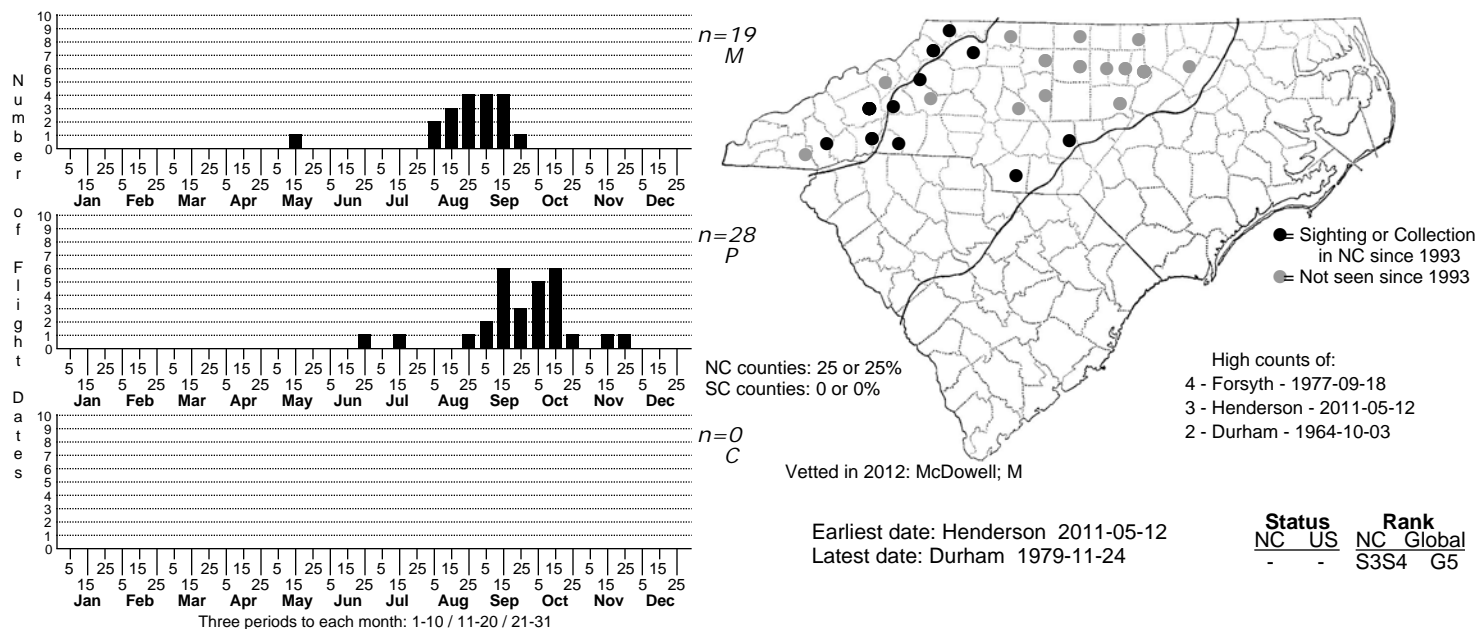
**FLIGHT:** Mid-June to early November in the Piedmont, but the first records for the Coastal Plain aren't until mid-July (though it ought to appear in June). The mountain records are fairly late in the season -- early August to late September.

**HABITAT:** Rivers and larger streams, typically where the current is slow to moderate flowing. Apparently at larger rivers and slower-flowing waters than is the American Rubyspot, though the habitats overlap, and both can occur along the same stream or river.

**BEHAVIOR:** This species is more wary than is the American Rubyspot, making photography or close observation of one more challenging.

**COMMENTS:** Considering the large number of counties known for the species (61), we have recent records for only 11 of them. In some species, this would indicate a decline in the population of the species. It is premature to say that a decline has occurred, and perhaps the species is being overlooked as American Rubyspots. At any rate, the relative scarcity of recent records is surprising, if not disturbing, for such a fairly large and conspicuous species.

## *Archilestes grandis* Great Spreadwing



**DISTRIBUTION:** Apparently throughout the mountains and Piedmont; and seemingly absent from the Coastal Plain. The range appears to stop at the Fall Line.

**ABUNDANCE:** Rare to uncommon in the mountains; rare in the Piedmont, and very rare along the eastern edge of the range (Fall Line vicinity).

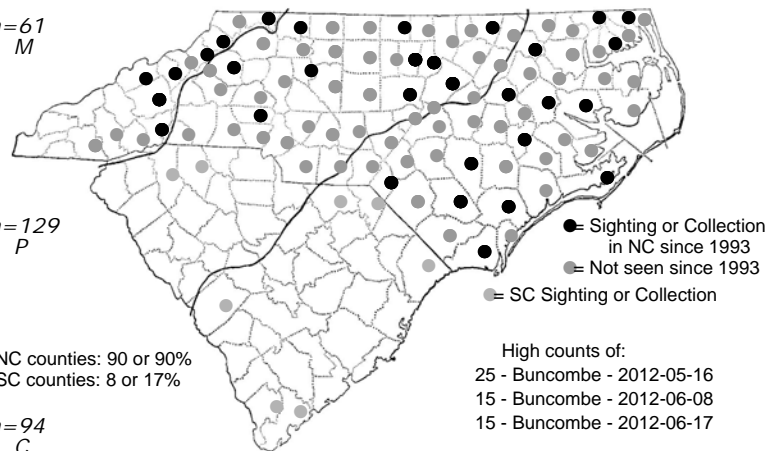
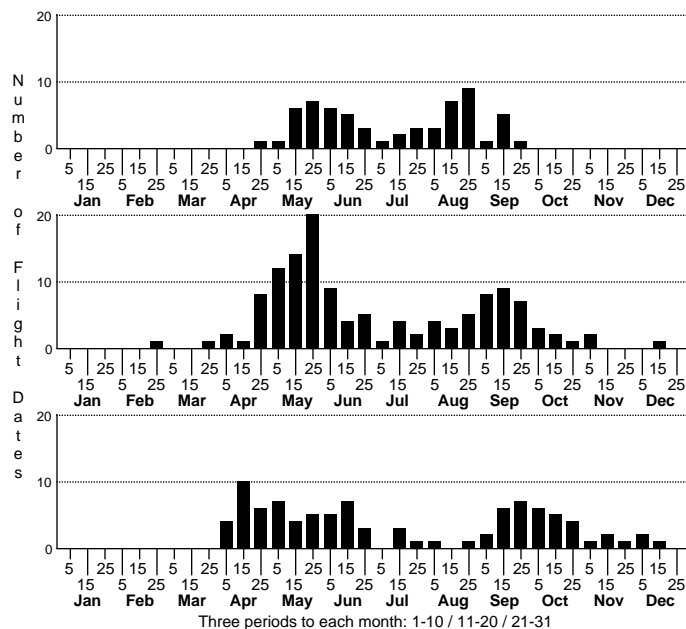
**FLIGHT:** In the mountains, generally from early August to late September, and in the Piedmont mainly from late June to late November. The report for May in the mountains (photos below) is remarkably early.

**HABITAT:** Along slow streams, but sometimes in rather degraded places.

**BEHAVIOR:** It can often be seen well away from streams, such as around ponds or in fields/forest edges.

**COMMENTS:** This is a very large damselfly, larger than other spreadwings. The range seems a bit spotty in the mountains and western Piedmont, though the species is assumed to occur throughout these regions, and there are a number of recent records. For whatever reason, there are hardly any recent records east of the foothills, suggesting a decline in the population in much of the Piedmont.

## *Lestes australis* Southern Spreadwing



Earliest date: Durham 1976-02-28  
Latest date: Durham 1990-12-13

Synonym: *Lestes disjunctus australis*  
Other Name: Common Spreadwing, Northern Spreadwing

Status	Rank
NC US	NC Global
- -	S5 G5

**DISTRIBUTION:** Essentially statewide, even to the coast (where many odonates are rare or absent). Absent from several counties at the southwestern tip, but probably present in all 100 counties.

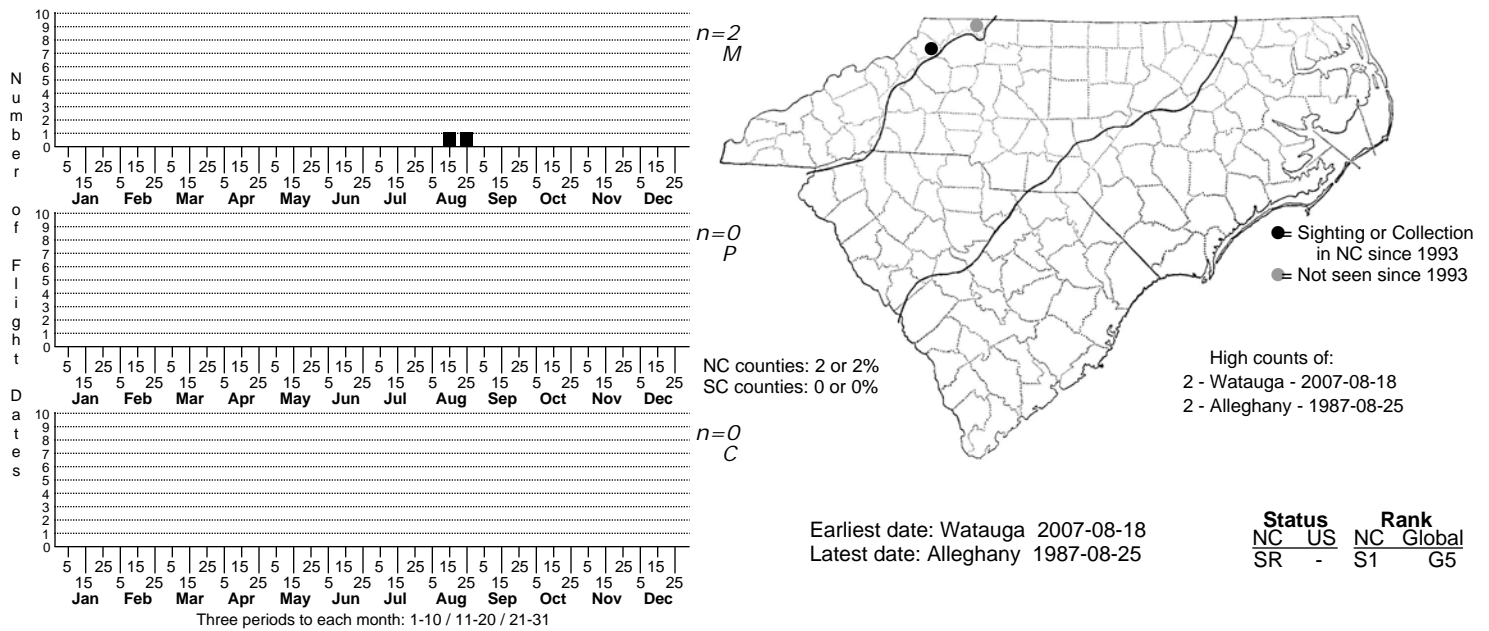
**ABUNDANCE:** Fairly common to often common in the mountains and Piedmont, except scarce (rare?) in the extreme southwestern counties. Fairly common and widespread in most of the Coastal Plain.

**FLIGHT:** A remarkably wide flight period, even into early winter. In the Coastal Plain and Piedmont, from late March or early April well into November, and rarely to mid-December. There is even a late February record for the Piedmont. In the mountains, the flight occurs between late April and late September.

**HABITAT:** Generally around ponds or small lakes, with much vegetation around their margins, including marshes.

**COMMENTS:** Until recently, this was considered as a subspecies of the Common Spreadwing; however, that species was split into two species -- Southern Spreadwing and Northern Spreadwing (not in North Carolina).

## *Lestes congener* Spotted Spreadwing



**DISTRIBUTION:** Currently the northwestern mountains only. NC is near the southeastern edge of the range of this widespread species.

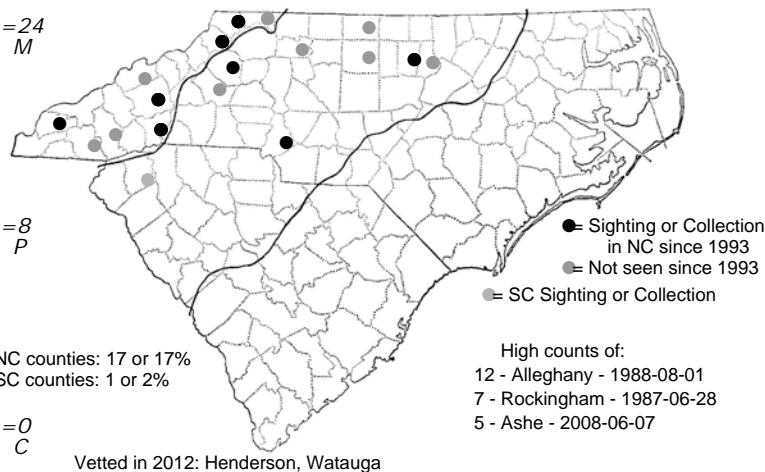
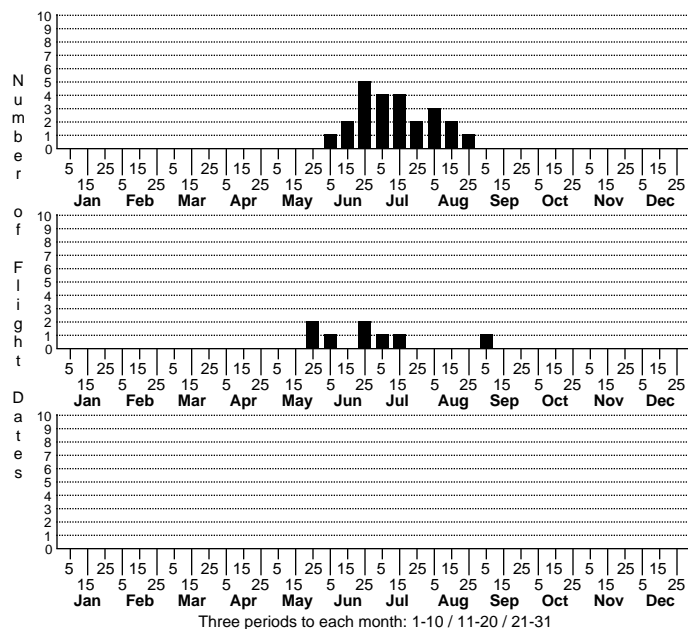
**ABUNDANCE:** Males can be abundant in good habitat within at least part of the range. It is possible that the species is not actually rare in the northwestern corner of the state, just poorly surveyed for. However, as we are aware of just two records, it must be considered to be rare in the state, south only to Watauga County.

**FLIGHT:** Paulson (2011) lists flight dates from May to October over the range. Ted Wilcox reported two individuals on 18 August from Watauga County, and there is a collection record of two individuals on 25 August from Alleghany County.

**HABITAT:** Lakes and ponds, with some emergent vegetation around the margins. Roosts in woody vegetation, to a height of 10 feet.

**COMMENTS:** The species is obviously poorly known in the state. Additional surveys should be conducted in Ashe and Avery counties, particularly around alder thickets.

# *Lestes eurinus* Amber-winged Spreadwing



Earliest date: Orange 2004-05-25  
Latest date: Guilford 1987-09-09

Status	Rank
NC US	NC Global
W -	S3 G4

**DISTRIBUTION:** Scattered throughout the mountains and the northern Piedmont. The only record for the southern half of the Piedmont is for Mecklenburg County. This is a northern species nearing the southeastern extent of its range in the state; there are records from South Carolina and western Georgia.

**ABUNDANCE:** Uncommon and local in the mountains; seemingly quite rare in some areas of the mountains. Rare in the Piedmont portion of the range. There is only one daily count of more than 7 individuals.

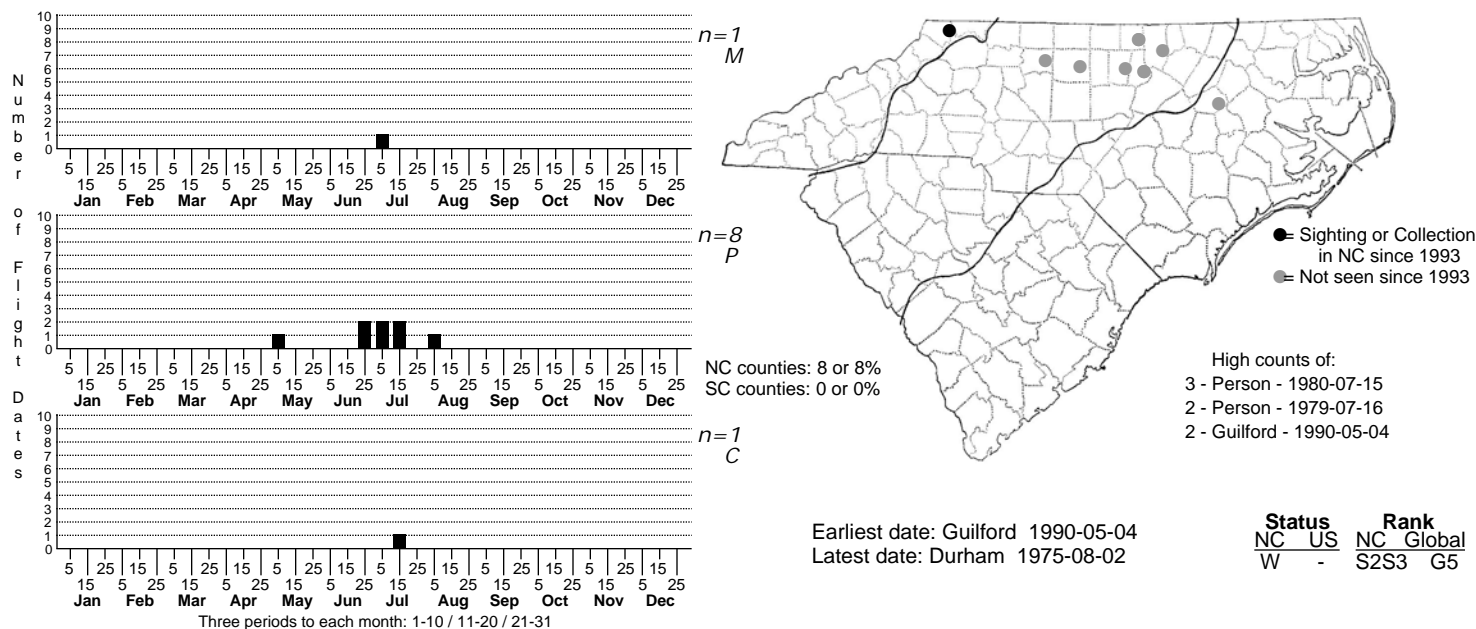
**FLIGHT:** In the mountains, from early June to mid-August. The few Piedmont records fall between late May and early September.

**HABITAT:** Mainly in ponds and lakes, even small wetlands, but with some emergent vegetation along the shores.

**COMMENTS:** Considering the potential to occur in most Piedmont counties, we have only a few recent records from the province. The NC Natural Heritage Program put the species on its Watch List in late 2012.



## *Lestes forcipatus* Sweetflag Spreadwing



**DISTRIBUTION:** This is a northern species whose range extends south only to NC, TN, and northern GA. In the state, it is limited to the northern third of the state, thus far recorded only in the northern mountains and northern Piedmont, with an odd disjunct record for Wilson County.

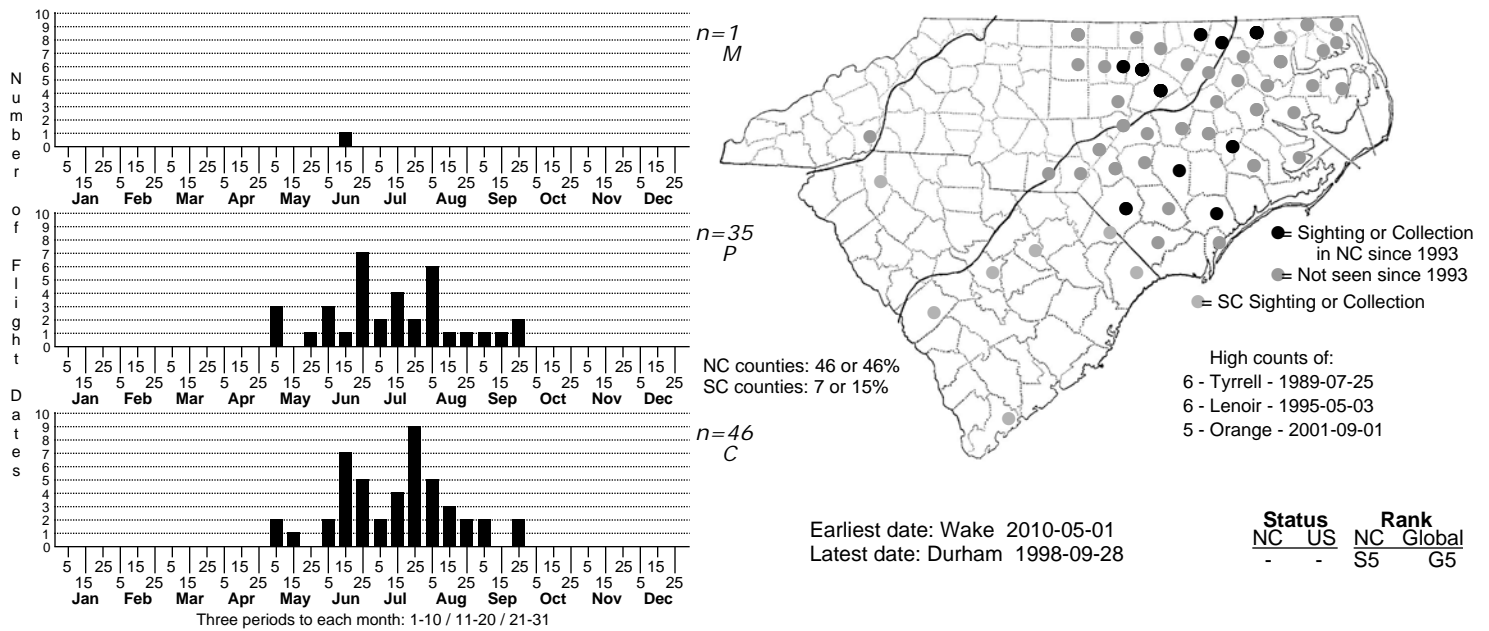
**ABUNDANCE:** Rare or overlooked. Rare in the Piedmont and extreme northern mountains, and presumed extremely rare in the northwestern Coastal Plain. However, the species is quite similar to other spreadwings, and thus is presumably overlooked, as well.

**FLIGHT:** Probably June into September; this is the spread of dates for GA. The Piedmont flight in NC is from early May to early August. The single record for the mountains is for early July, whereas the single one for the Coastal Plain is for mid-July.

**HABITAT:** Ponds and lakes with emergent vegetation, even in small pools.

**COMMENTS:** Though there are seven old county records for the Piedmont and Coastal Plain, we have no recent records for these provinces, despite a moderate number of biologists. Maybe the similarity to other spreadwings is the main reason for this lack of recent records. Though there are very few records for NC, the fact that few persons actually search for scarce damselflies, and some of these insects are easily confused with others, the NC Natural Heritage Program has kept the species on its Watch List instead of moving it to the Rare List.

## *Lestes inaequalis* Elegant Spreadwing



**DISTRIBUTION:** Throughout the Coastal Plain -- except perhaps absent along the immediate coast -- westward to the central Piedmont; thus, the eastern half of the state. There is also a collection record for the southern mountains (Henderson County). Interestingly, Paulson's (2011) range map shows the entire state within the range, as the species is present throughout the eastern half of the country.

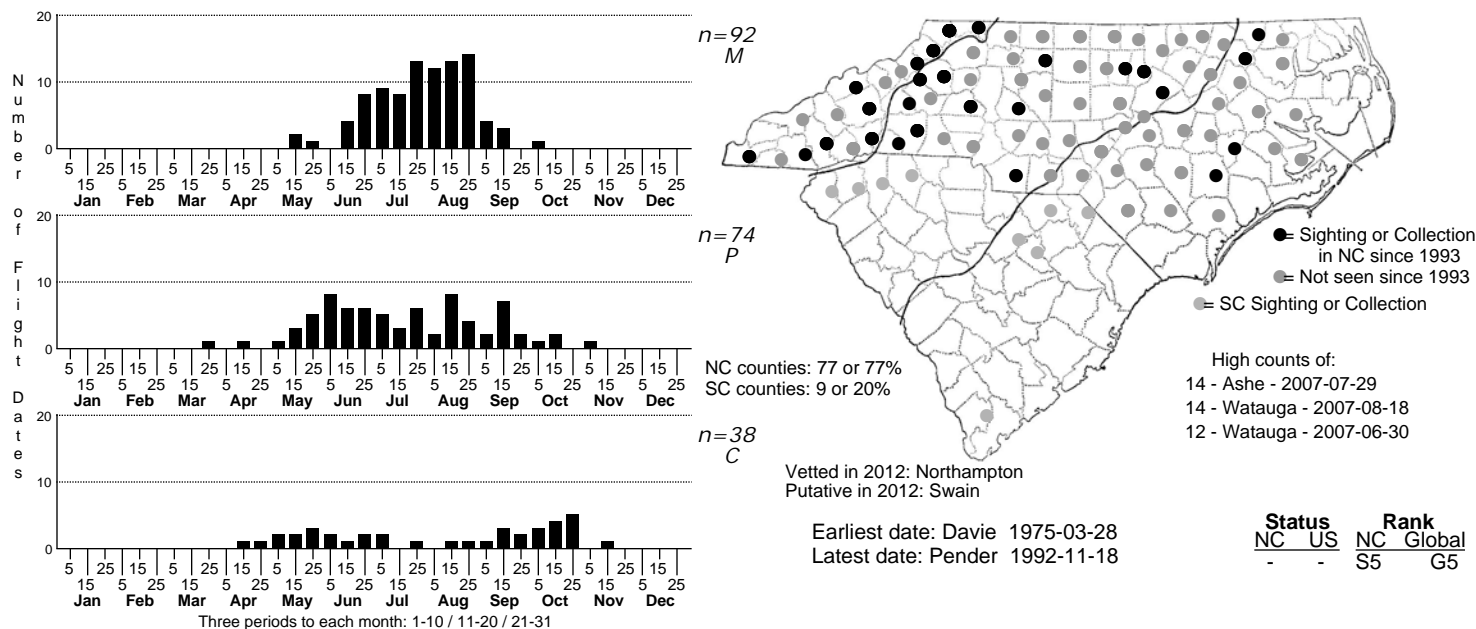
**ABUNDANCE:** Despite records for most of the counties within the range (over 45 counties), we have barely ten recent records. Thus, it seems to be uncommon over the eastern Piedmont and most of the Coastal Plain, and likely is rare in many areas close to the coast (where there are no records for most counties that border the coast). Very rare to absent in the southern mountains.

**FLIGHT:** The flight period in both the Coastal Plain and the Piedmont is from early May to late September. The single mountain record is for mid-June.

**HABITAT:** Ponds and lakes with emergent vegetation, including marshes. It also occurs along slow-moving streams, as long as marshy vegetation is present.

**COMMENTS:** The scarcity of recent records is puzzling. Perhaps it is being overlooked, but there are also few biologists currently working in the Coastal Plain, especially on damselflies.

## *Lestes rectangularis* Slender Spreadwing



**DISTRIBUTION:** Nearly statewide, but seemingly absent close to the coast. This species ranges over most of the eastern United States.

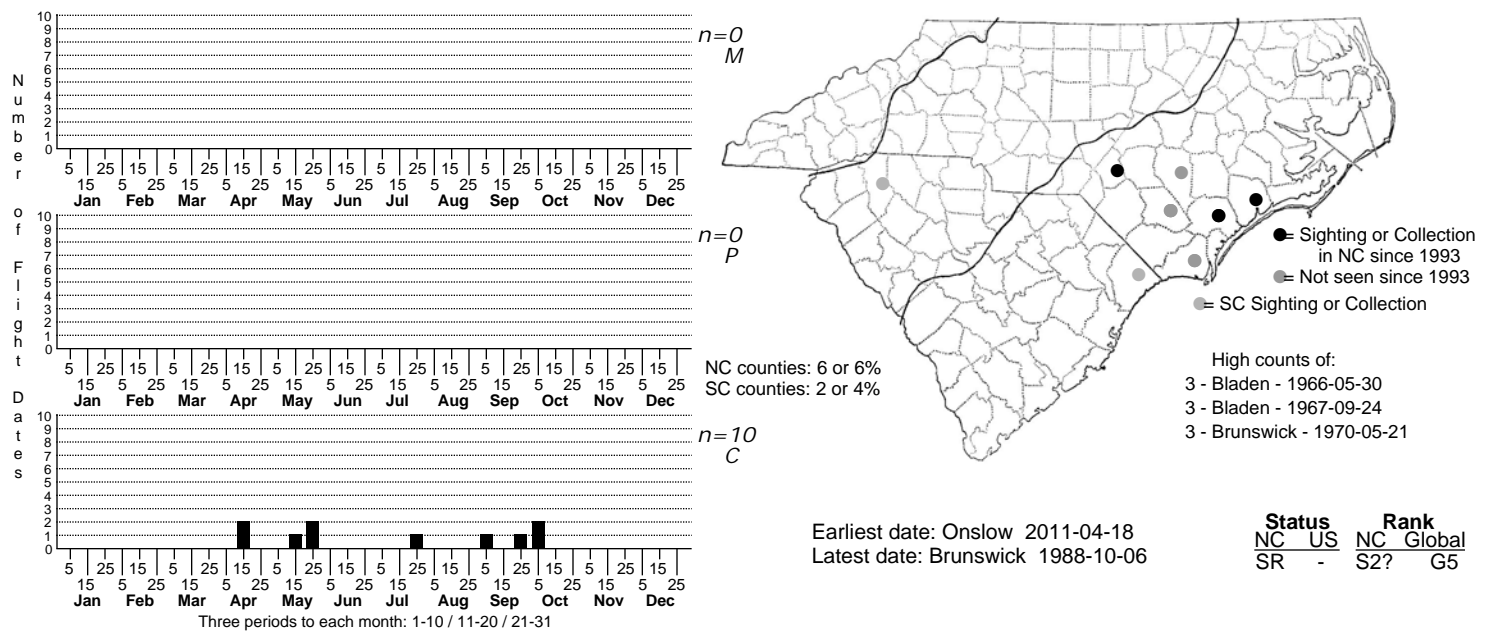
**ABUNDANCE:** Fairly common and widespread in the mountains and Piedmont; generally uncommon to fairly common in the western and central Coastal Plain. No records yet for the counties north or south of Albemarle Sound, and in most southern coastal counties. More numerous in the mountains than downstate.

**FLIGHT:** A long flight period, covering most of the odonate season. From late March to early November in the Piedmont, and mid-April to mid-November in the Coastal Plain. Surprisingly, the earliest record in the mountains isn't until mid-May, and it occurs to at least early October.

**HABITAT:** Marshy areas, typically around ponds or lakes, but also sometimes slow streams with emergent vegetation.

**COMMENTS:** This is one of the more numerous damselflies in the mountains, but it is widespread downstate. Its range in the lower Coastal Plain needs more elucidation, though it is certainly scarce close to tidal water.

## *Lestes vidua* Carolina Spreadwing



**DISTRIBUTION:** Restricted to the southeastern Coastal Plain, north to Hoke, Sampson, and Onslow counties. However, as Paulson (2011) shows the range of this Southeastern species extending north to the Great Dismal Swamp, VA, area, it might occur elsewhere in the NC Coastal Plain north of the existing range.

**ABUNDANCE:** Rare to perhaps locally uncommon. Beaton (2007) also calls it "Rare to uncommon and local" in GA. Peak one-day counts are just 3 individuals.

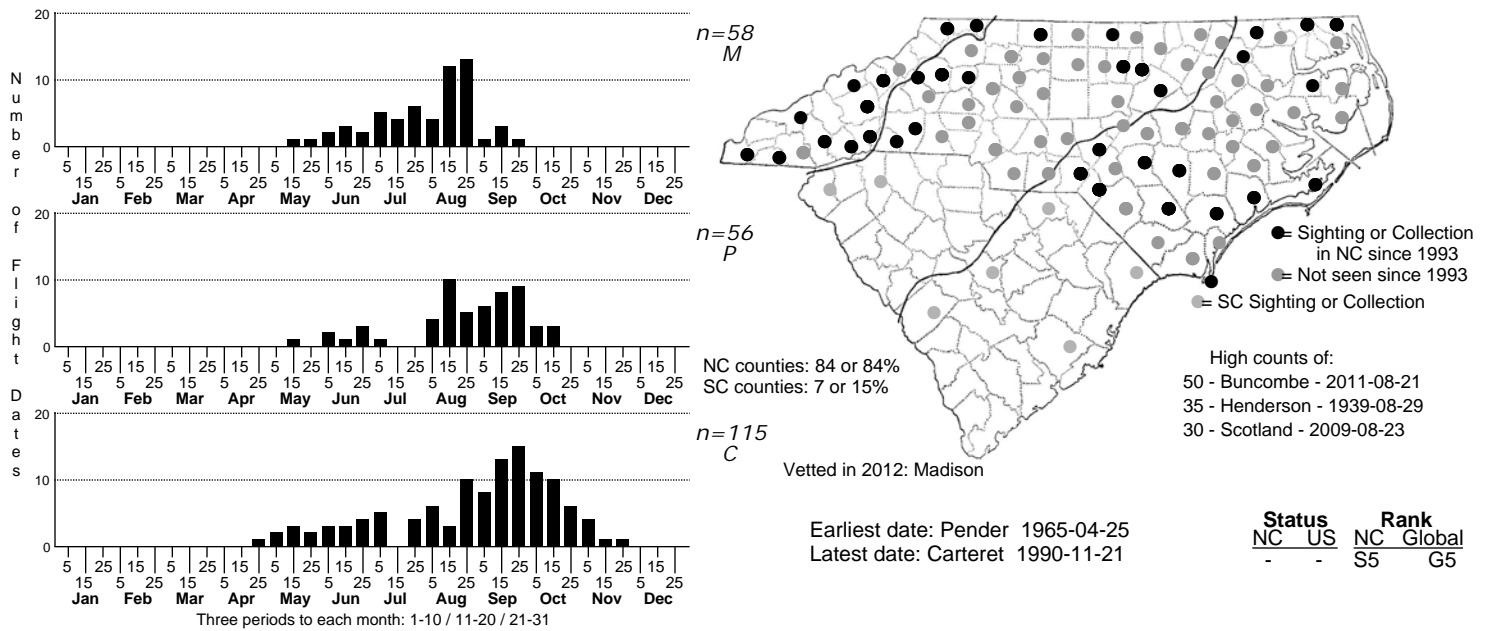
**FLIGHT:** Beaton (2007) shows flight dates from mid-March to mid-November for GA, but adds: "Flight season is not fully understood, more readily found during April-May and September-October (especially fall) and largely absent during the middle of the season." The range of dates in NC is quite broad, from mid-April to early October, also showing very few records in the middle months of the flight period. There is no reason to assume that the species is more frequent early and late in the season, as only a migrant species, or one that aestivates in the hottest months, would show such a pattern, and spreadwings are assumed not to show such behaviors.

**HABITAT:** Marshes, edges of lakes and ponds, including temporary ponds.

**BEHAVIOR:** According to Beaton (2007), males are usually found over water, perching on plants, while females can be found along the shoreline away from open water.

**COMMENTS:** This species clearly deserves some search efforts in North Carolina. It is one of the most poorly-known damselflies in the state, as evidenced by only 10 known records from just six counties. As a result, the NC Natural Heritage Program elevated the species from its Watch List to its Rare List in fall 2012.

## *Lestes vigilax* Swamp Spreadwing



**DISTRIBUTION:** Statewide, being recorded from over 80 counties, with "absences" in scattered counties across the state. Presumed to occur in all 100 counties, unless absent along the immediate northeastern coast.

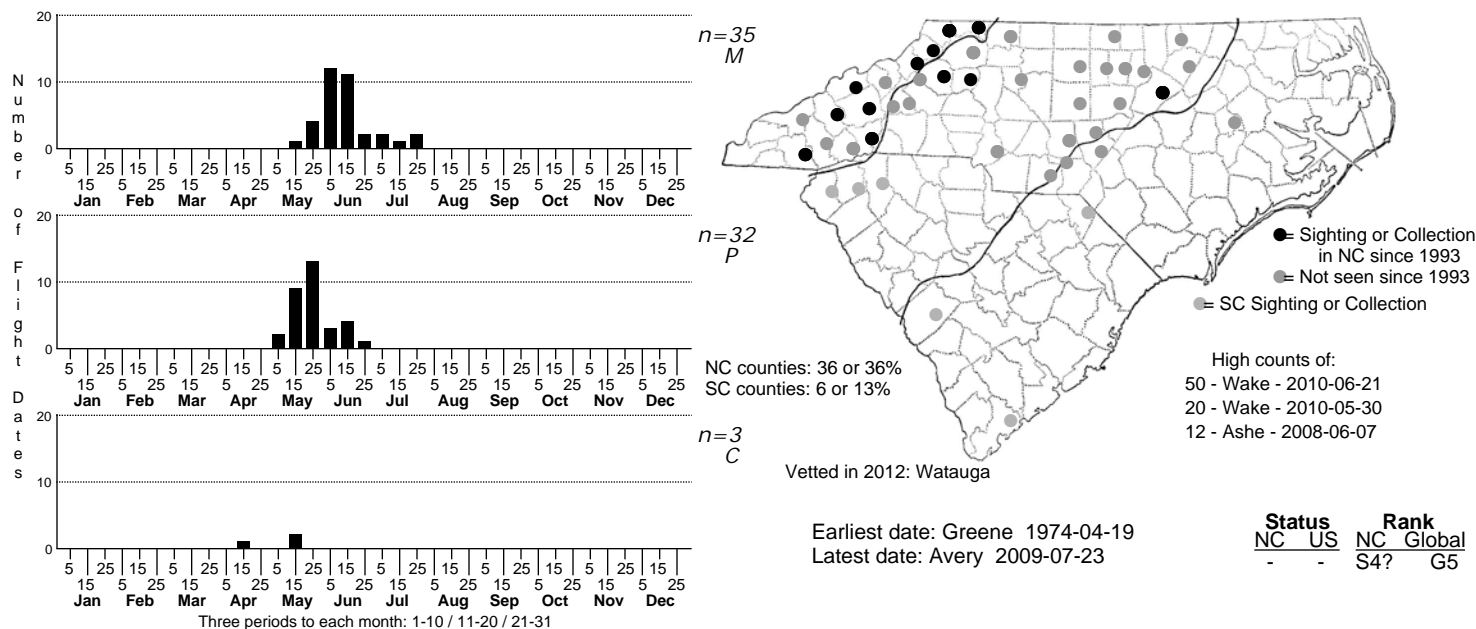
**ABUNDANCE:** Common across the state, at least locally. There are single-party counts of at least 20 individuals in each of the three provinces. Probably much less common along the immediate coast and in counties in the Tidewater region, and also perhaps not common in the higher mountains.

**FLIGHT:** A wide flight period, extending to late autumn. In the Coastal Plain, it occurs from late April to late November. Piedmont records fall between mid-May and mid-October; mountain records fall between mid-May and late September.

**HABITAT:** Ponds and lakes in somewhat wooded country, especially where shrubs grow in the water; or where marshy vegetation grows along the margins of such waters.

**COMMENTS:** This is another reasonably common spreadwing across the state, with large numbers of records in all three provinces.

## *Amphiagrion saucium* Eastern Red Damsel



**DISTRIBUTION:** Throughout the mountains and Piedmont, perhaps in the western Sandhills, and an isolated record for the central Coastal Plain. The species is a somewhat Northern species, ranging south to central GA.

**ABUNDANCE:** Fairly common, to locally common, in the mountains. Seemingly rare in the western half of the Piedmont, and uncommon in the eastern half, though it can be locally numerous there. Very rare in the western Coastal Plain.

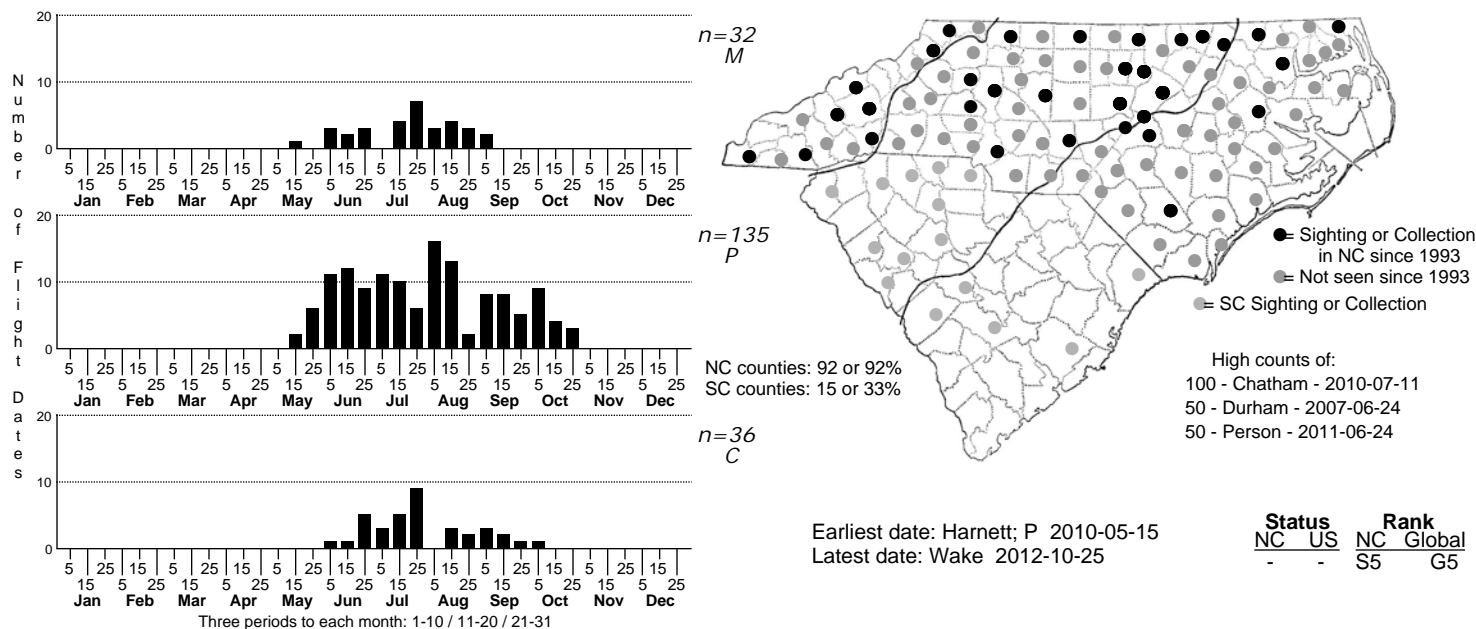
**FLIGHT:** A flight that ends rather early in the season, by mid-summer. The mountain flight occurs between mid-May and late July. The Piedmont flight is from early May to late June, whereas the few Coastal Plain records are in a narrow window from mid-April to mid-May. The species is presumed to occur into July in the Piedmont and Coastal Plain.

**HABITAT:** Small streams, seeps, bogs, or marshes, with thick vegetation.

**BEHAVIOR:** Perches on grasses and sedges, never on flat leaves.

**COMMENTS:** The absence of county records for much of the central and southern Piedmont is odd, considering that there are daily counts in Wake County, at the eastern edge of the Piedmont, of 20 and 50 individuals. It is not a species that is difficult to identify; thus, this odd abundance pattern might be real.

## *Argia apicalis* Blue-fronted Dancer



**DISTRIBUTION:** Essentially statewide, though possibly absent in the eastern Tidewater Region. Presumably absent on the Outer Banks.

**ABUNDANCE:** Common to locally very common in the Piedmont and western Coastal Plain, particularly around flowing water in the Piedmont. Fairly common to locally common in the mountains and the central Coastal Plain. Rare in the northeastern Coastal Plain, and probably absent near the coast there.

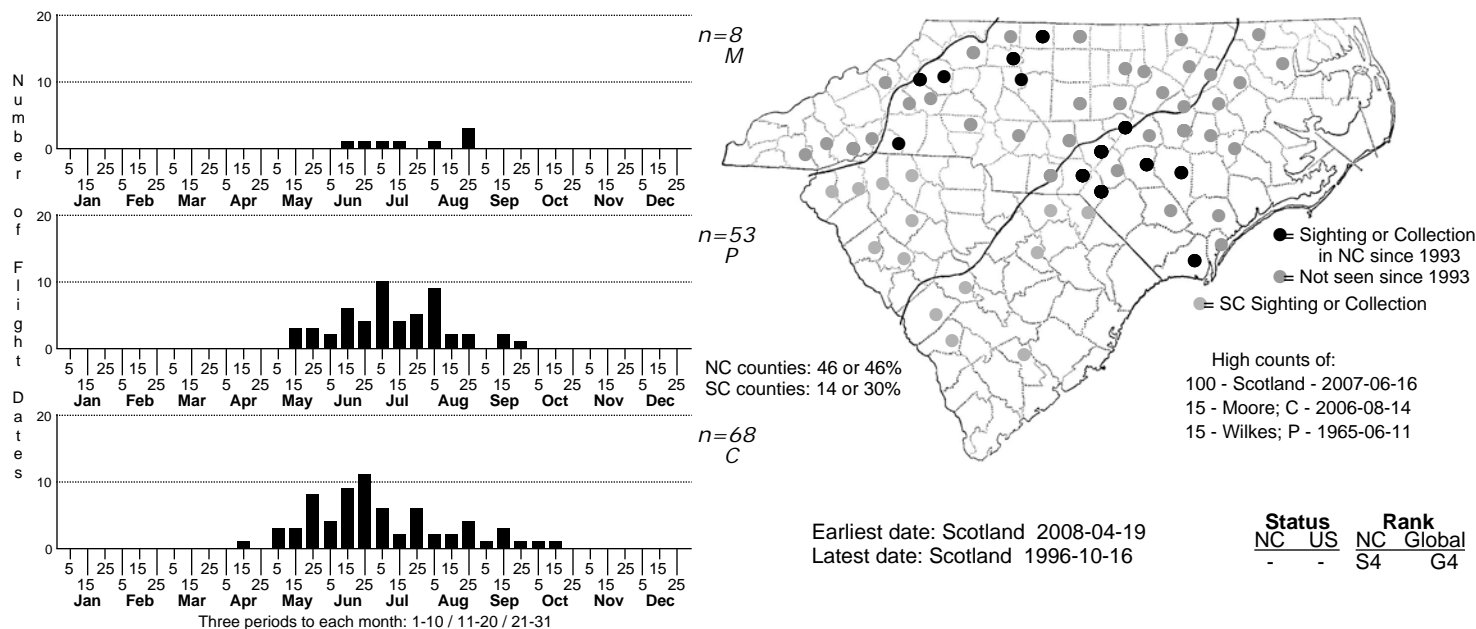
**FLIGHT:** Mid-May through late October in the Piedmont, and early June (if not from mid-May) to early October in the Coastal Plain. The flight in the mountains is from mid-May at least to early September (and likely later).

**HABITAT:** Rivers and large streams, but can be found away from water.

**BEHAVIOR:** Prefers open areas with sunlight, using rocks, ground, or available vegetation.

**COMMENTS:** This is one of our most common and widespread damselflies, except near the northeastern coastal areas. There are several one-day counts of at least 50 individuals, all from the lower Piedmont.

## *Argia bipunctulata* Seepage Dancer



**DISTRIBUTION:** Scattered throughout the Piedmont and western two-thirds of the Coastal Plain; of spotty occurrence in the mountains and eastern Coastal Plain, and apparently absent in the Tidewater zone.

**ABUNDANCE:** Uncommon to locally fairly common/common in the Sandhills region. Elsewhere, uncommon (and perhaps local) across the Piedmont and the western 50-60% of the Coastal Plain (excluding the Sandhills). Rare in the mountains and central Coastal Plain, and apparently absent in nearly all counties that border the Albemarle and Pamlico sounds.

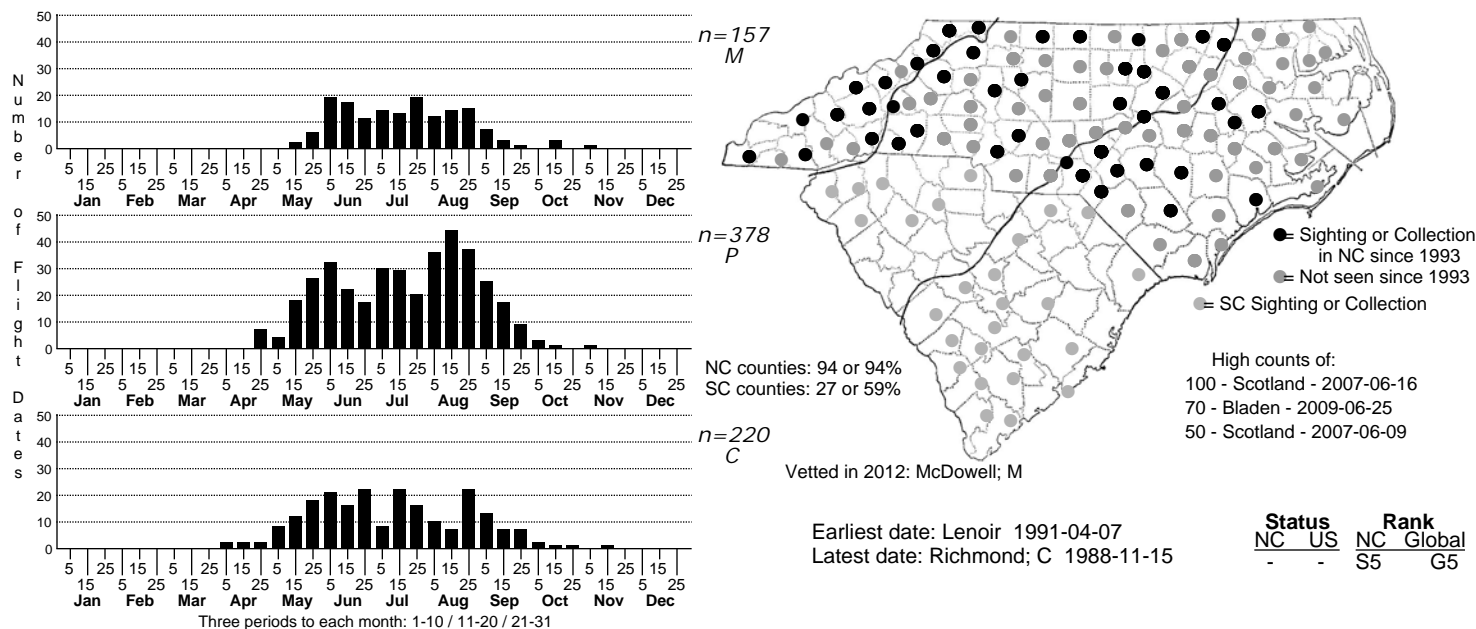
**FLIGHT:** Mid-April to mid-October in the Coastal Plain, and mid-May (if not earlier) to late September in the Piedmont. The few mountain records fall between mid-June and late August.

**HABITAT:** As the name implies, found around seeps or boggy places, where there are abundant sedges.

**COMMENTS:** This dancer can be easily overlooked because it often perches low in dense herbaceous vegetation around pond margins and seepage areas. A one-day tally of 100 in Scotland County is by far the most seen in a single day; the next highest tally is just 15 individuals. Paulson (2011) indicates that, because its seepage habitat is somewhat limited, populations tend to be localized and not widespread over a large region.



## *Argia fumipennis* Variable Dancer



**DISTRIBUTION:** Essentially statewide, with the exception being the northeastern Coastal Plain. Two subspecies are represented in North Carolina: *Argia fumipennis fumipennis* in the eastern Piedmont and Coastal Plain, and *A. f. violacea* in the western Piedmont and mountains.

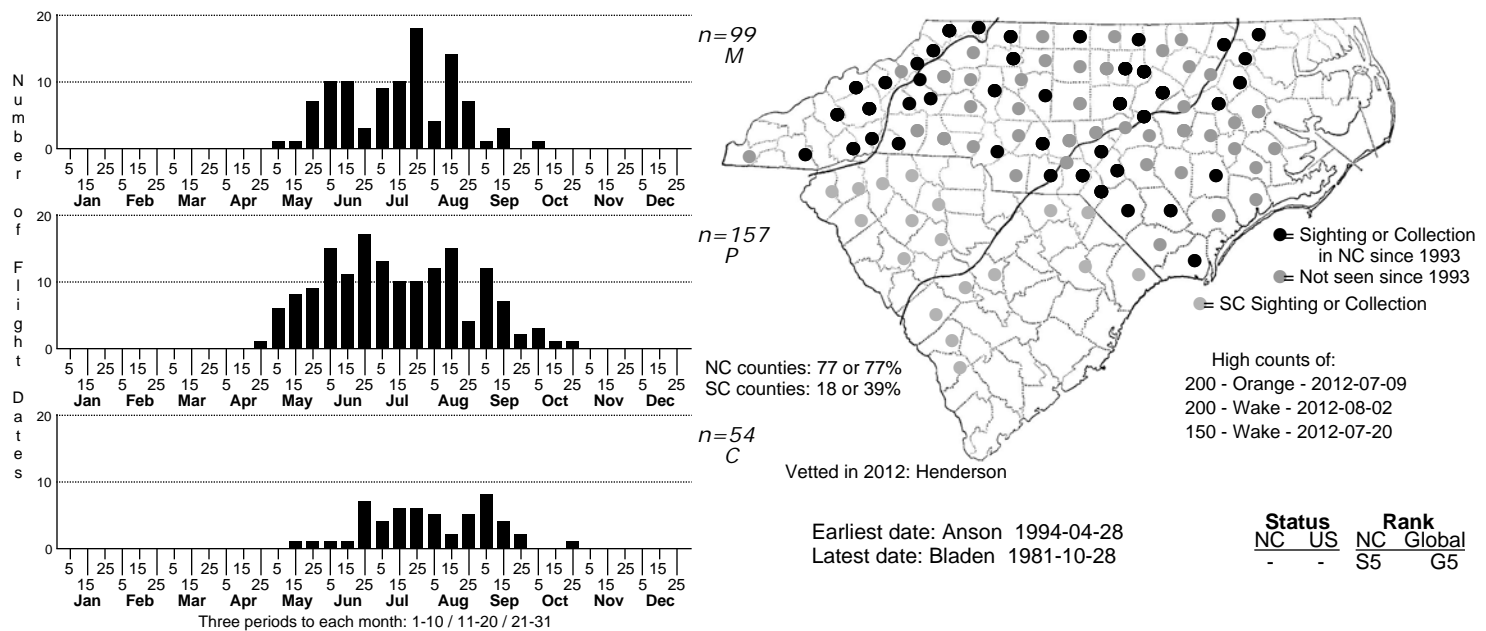
**ABUNDANCE:** Common to locally abundant across the state (except rare to absent in the extreme northeast); can often be the most numerous damselfly at a site. Most numerous in the Sandhills, where our largest one-day totals have been made.

**FLIGHT:** The flight occurs nearly throughout the odonate flight season, as the Coastal Plain records fall from early April to mid-November. The Piedmont flight occurs between late April and early November, while the mountain flight starts slightly later -- mid-May to early November.

**HABITAT:** Extremely variable. Around small streams, ditches, pond margins, and other slow waters; usually where there are grasses and sedges. May often feed well away from water.

**COMMENTS:** As the name implies, this species has highly variable color patterns, though there is generally some lavender coloration on the thorax. It is another of our more familiar damselflies in the state, being common in each of the three provinces.

## *Argia moesta* Powdered Dancer



**DISTRIBUTION:** Throughout the mountains, Piedmont, and the western two-thirds of the Coastal Plain. Absent from most of the eastern third (i.e., nearly all counties around Albemarle and Pamlico sounds).

**ABUNDANCE:** Common to very common/abundant in the eastern Piedmont; common elsewhere across the mountains, Piedmont, and western 60-65% of the Coastal Plain, though less numerous in the southwestern part of the mountains. May be legitimately absent from nearly all counties in the Tidewater zone.

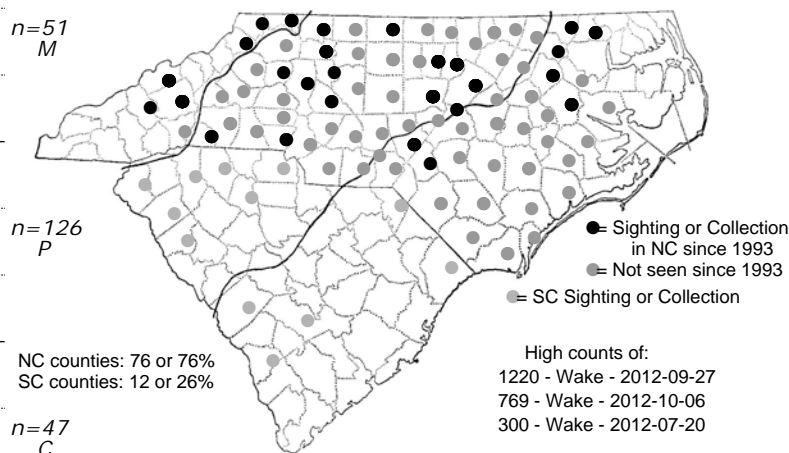
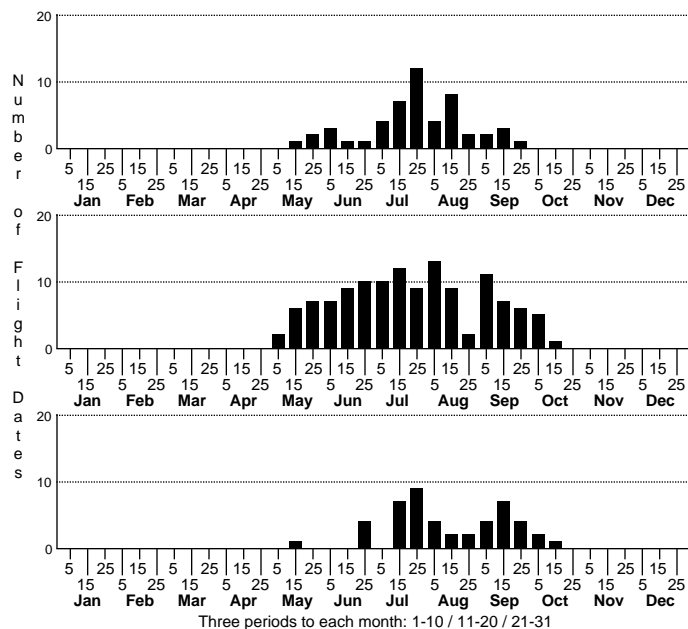
**FLIGHT:** The Piedmont flight occurs from late April to late October, and the Coastal Plain flight is at least from mid-May (if not earlier) to late October. The mountain flight occurs from early May to early October.

**HABITAT:** Found along rivers and streams, more so along rockier ones and larger ones than all other dancers. Can also be found along roads and other places away from water, when foraging.

**BEHAVIOR:** This is the most frequently seen dancer along rockier streams and rivers, often perching on exposed rocks.

**COMMENTS:** The highest counts in the state are all from the eastern Piedmont, though this might be an artifact of observer coverage rather than a true abundance pattern. Adult males are easily identified by their very glaucous (whitish) "bloom", particularly on the thorax.

# *Argia sedula* Blue-ringed Dancer



Putative in 2012: Watauga

Earliest date: Anson 1990-05-07  
Latest date: Pender 1964-10-20

Status	NC	US	Rank	NC	Global
-	-	-	S5	G5	

**DISTRIBUTION:** Occurs over most of the state, but apparently absent in the eastern third or quarter of the Coastal Plain (i.e., the Tidewater area). Probably present over all of the mountains, but no records yet for the southwestern counties.

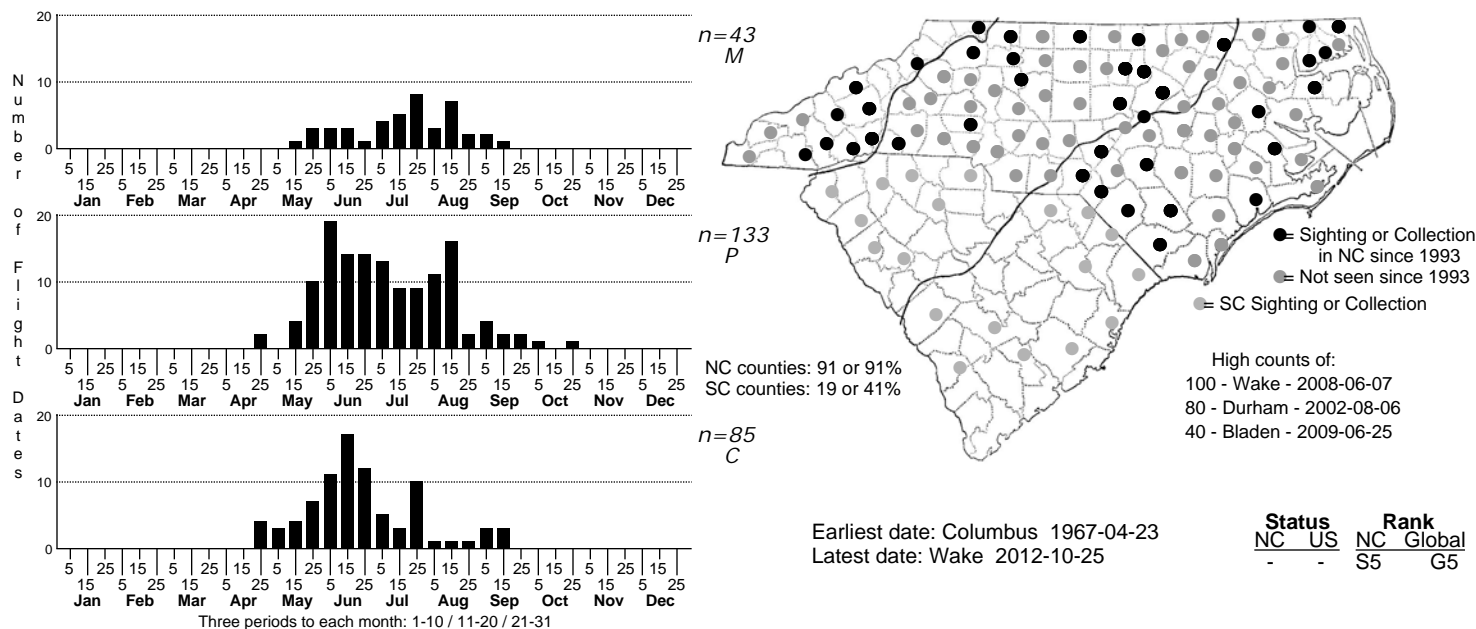
**ABUNDANCE:** Common to locally abundant (at least near the Fall Line) in the Piedmont; fairly common in the western Coastal Plain, but likely uncommon to locally fairly common in the remainder of the Coastal Plain part of the range. Uncommon to locally fairly common in the mountains, but apparently rare (though likely not absent) in the southwestern counties. Presumed absent in the Tidewater zone, from Pamlico Sound to the VA border.

**FLIGHT:** The Piedmont flight occurs from early May to mid-October. The mountain flight is from mid-May to late September, whereas the Coastal Plain flight occurs from mid-May to mid-October.

**HABITAT:** Streams and rivers, typically where somewhat rocky, and usually where there is some herbaceous vegetation along the water. Sometimes around shores of lakes and ponds, and can be found along roads and other corridors away from water.

**COMMENTS:** There have been a few remarkably high counts for the species along the Neuse River below the Falls Lake dam. This is another of the common species of dancers, normally easily found in most parts of the state. The absence of records for the extreme southwestern mountains seems puzzling, considering that range maps include most of the Southeastern states.

## *Argia tibialis* Blue-tipped Dancer



**DISTRIBUTION:** Statewide, though possibly absent along the extreme northeastern coastal areas. Likely found in all mountain counties, though a few in the northern mountains lack records.

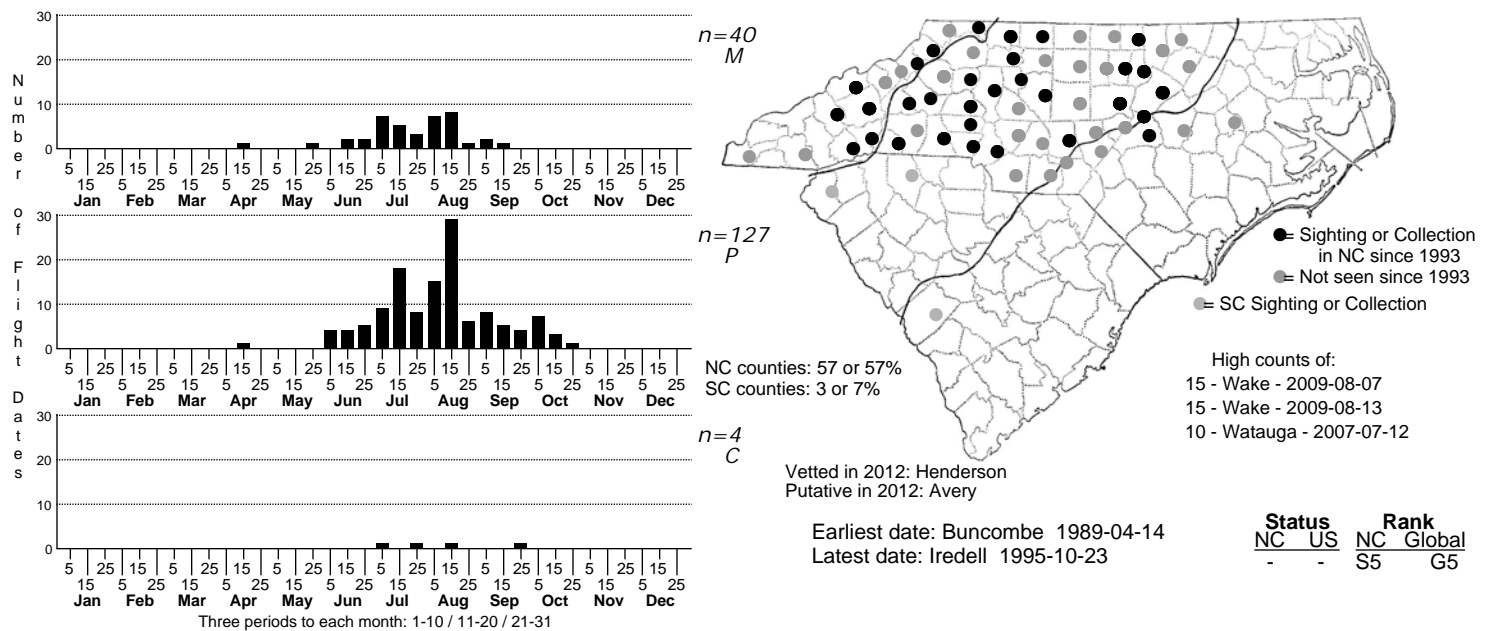
**ABUNDANCE:** Common to locally very common in the Piedmont and western/central Coastal Plain; fairly common to locally common in much of the mountains. Not common in the eastern part of the Coastal Plain, but at least uncommon to fairly common, except rare to absent in the extreme northeastern counties.

**FLIGHT:** Downstate, occurs from late April to mid-September (and probably later) in the Coastal Plain and to late October in the Piedmont. The mountain flight occurs between mid-May and mid-September.

**HABITAT:** Small and mainly wooded creeks/streams, typically with a few riffles. Less often along rivers or larger streams without riffles. Typically closer to forested creeks than other dancers.

**COMMENTS:** This is still another dancer species that is common across most of the state and occurs in nearly all counties, but as with many, it is scarce or absent in the extreme northeastern part of the Coastal Plain. In GA, Beaton (2007) says it is "Often the most numerous dancer at any given site"; however, in NC, it shares abundance with a number of other dancer (*Argia*) species and does not seem quite as numerous as the Variable, Powdered, and Blue-ringed dancers.

## *Argia translata* Dusky Dancer



**DISTRIBUTION:** Throughout the mountains and Piedmont (though no records yet for the extreme northeastern corner of the Piedmont). Nearly absent from the Coastal Plain, though present along the Fall Line in a few such counties. Oddly, the range map in Paulson (2011) shows it nearly "absent" in the Piedmont of both VA and SC.

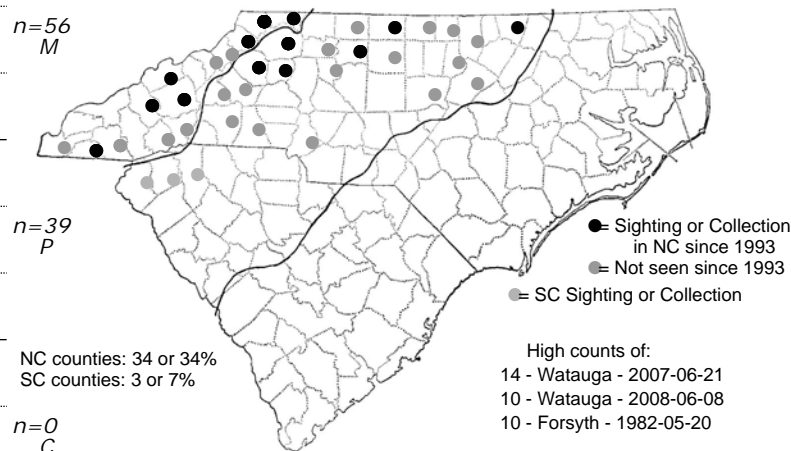
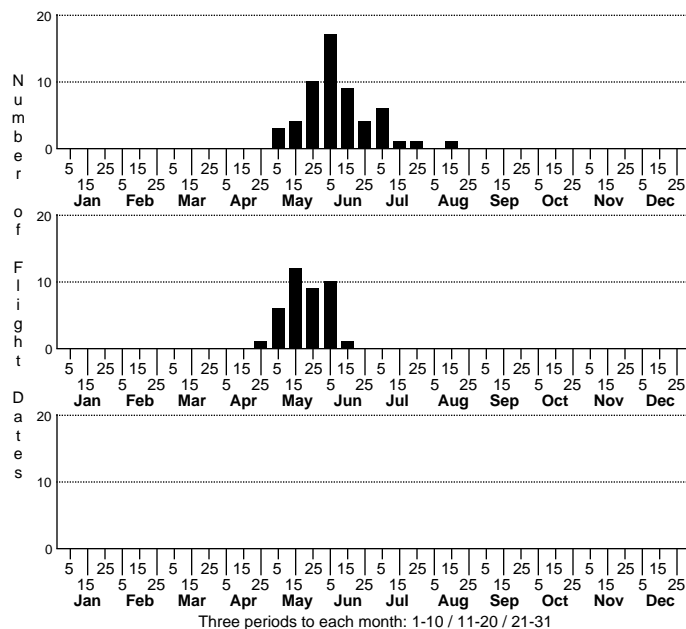
**ABUNDANCE:** Fairly common in the Piedmont and mountains (at least locally); nowhere truly common, as the peak one-day counts are just 15 individuals. Absent, apparently, from the Coastal Plain, except near the Fall Line, and with an outlier record from Greene County.

**FLIGHT:** In the mountains and Piedmont, mainly late May or early June to late October (Piedmont) and to mid-September (mountains). Each province has a very early record for mid-April. The few Coastal Plain records are from early July to late September.

**HABITAT:** A variety of rivers and creeks; scarce at ponds or lakes. Often on rocks in the creek or river.

**COMMENTS:** The seeming near-absence of records from the VA and SC Piedmont is puzzling, considering that it not only has been found in nearly all such counties in NC (except lacking in the extreme northeastern corner of the Piedmont), but that there are some single-day counts in double-digits. One must presume that it is being overlooked, especially in VA.

# *Chromagrion conditum* Aurora Damsel



Earliest date: Cleveland 1970-04-29  
Latest date: Haywood 2007-08-18

Status	Rank
NC US	NC Global
- -	S4? G5

**DISTRIBUTION:** Throughout the mountains; scattered over most of the Piedmont, though possibly absent in the extreme southeastern counties. Absent from the Coastal Plain.

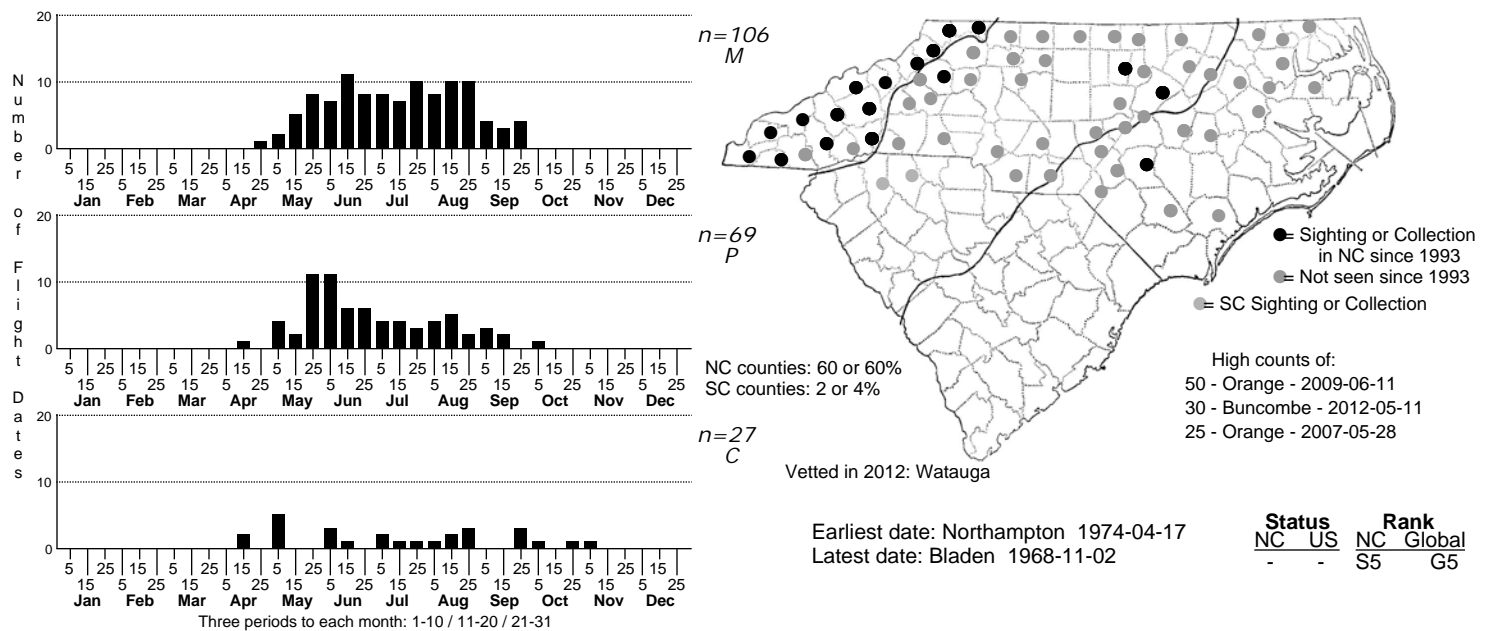
**ABUNDANCE:** Fairly common in the mountains, at least locally. Rare over most of the Piedmont, but apparently uncommon in the foothills. Possibly absent in a few counties in the southeastern Piedmont. The highest counts are from the mountains and foothills.

**FLIGHT:** The mountain flight is from early May to mid-August, whereas the Piedmont flight is from late April to mid-June. However, there is no reason the flight in the Piedmont should be narrower than that in the mountains, and it likely flies throughout July and into August.

**HABITAT:** Still waters of pools/ponds -- such as beaver ponds, bogs, seeps, and slow streams. Not often found far from water.

**COMMENTS:** There are relatively few recent records from the Piedmont, especially the southern half of the Piedmont. Does this indicate a recent decline? The species should be easily identified, at least with photographs.

## *Enallagma aspersum* Azure Bluet



**DISTRIBUTION:** Throughout the mountains, and essentially throughout the Piedmont; nearly throughout the Coastal Plain, but essentially absent in the eastern quarter, especially in the Tidewater zone.

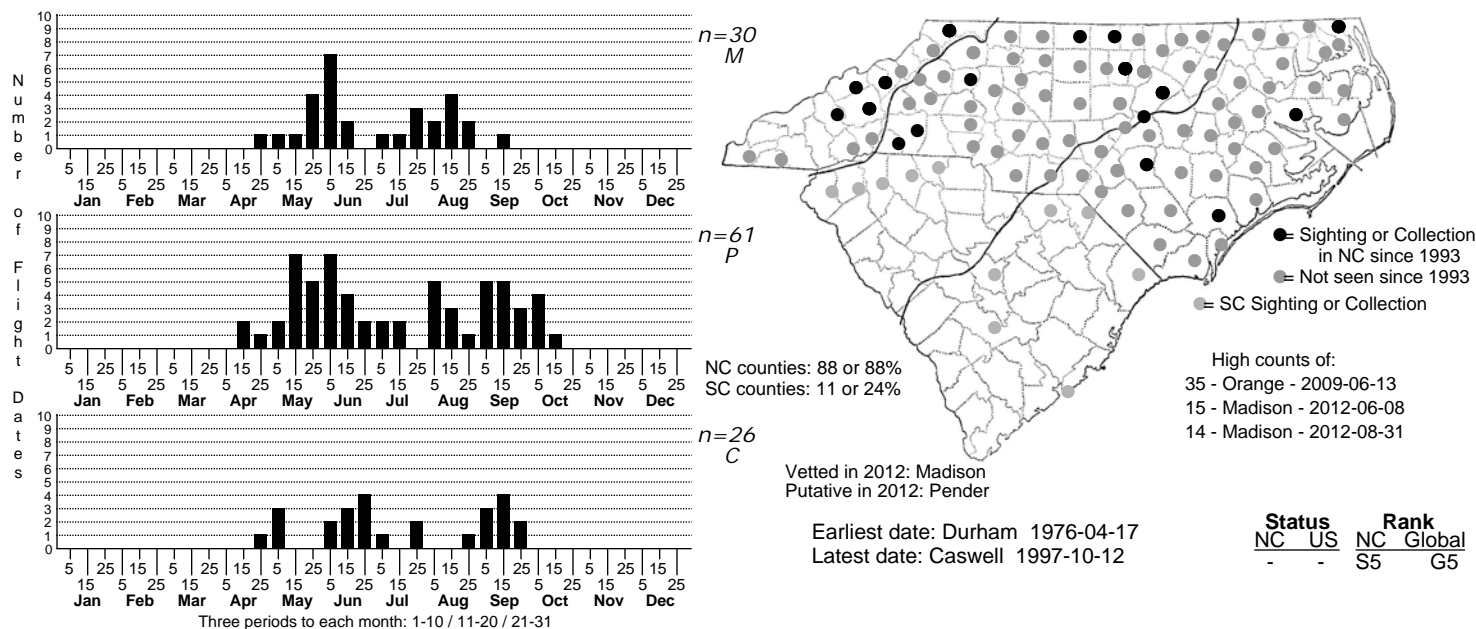
**ABUNDANCE:** Common in the mountains, at least locally. Uncommon in the Piedmont, though may be locally fairly common to common. Rare in the Coastal Plain, and possibly absent close to the coast, especially in the far eastern counties.

**FLIGHT:** The mountain flight occurs from late April to late September. The Piedmont flight is slightly longer -- mid-April to early October, and the Coastal Plain flight even slightly longer -- mid-April to early November.

**HABITAT:** Ponds and small lakes, usually with emergent vegetation. Waters should be without fish.

**COMMENTS:** Considering that there are records from just two Piedmont counties in recent years, the state's highest one-day count -- 50 individuals -- is from Orange County. Yet, there are no records for 35-40% of the Piedmont counties. Of note is that the species is very rare in the SC Piedmont, found just in a few foothill counties. The species is more easily found in the NC mountains than downstate.

## *Enallagma basidens* Double-striped Bluet



**DISTRIBUTION:** Essentially statewide. Though absent from a handful of mountain and far eastern Coastal Plain counties, it likely occurs in essentially all 100 counties.

**ABUNDANCE:** Fairly common in the mountains and Piedmont, but mostly uncommon in the Coastal Plain, and rare near the coast.

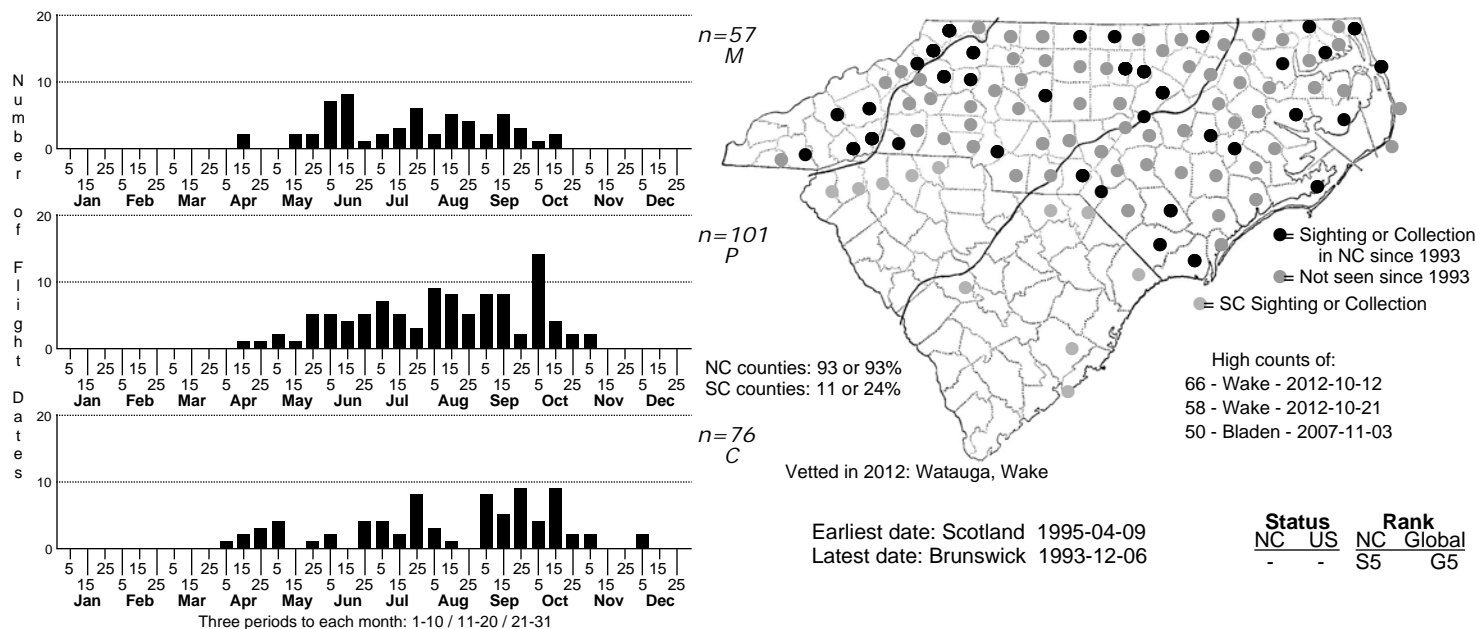
**FLIGHT:** The flight starts in mid- or late April in all provinces, and continues to mid-October in the Piedmont, at least to late September in the Coastal Plain, and to mid-September in the mountains.

**HABITAT:** Ponds and small lakes, as well as slow-moving streams, usually where there is emergent vegetation.

**COMMENTS:** As with so many of our damselflies, the number of recent records with flight dates is far fewer than what would be expected from the large number of county records historically -- implying little effort at studying damselflies by more recent biologists. Though the species occurs perhaps in all 100 counties, it is not overly common anywhere, with only one single-day tally of over 15 individuals.



## *Enallagma civile* Familiar Bluet



**DISTRIBUTION:** Statewide. Though no records for four counties in the southwestern tip of the state, it is assumed to occur in all 100 counties.

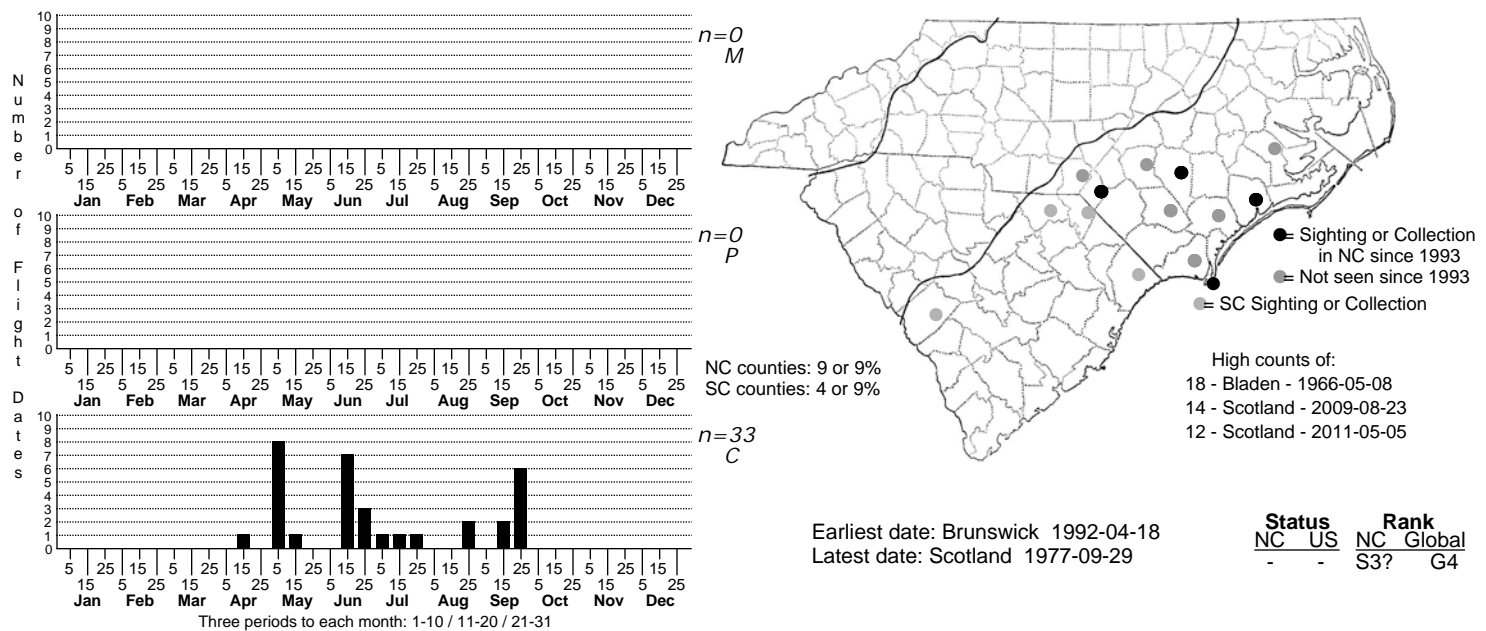
**ABUNDANCE:** Common to very common and widespread across the Coastal Plain and Piedmont; common in the northern and central mountains, but less numerous in the southwestern mountains.

**FLIGHT:** A very long flight period for a damselfly -- from early April to early December in the Coastal Plain (though scarce after early November). In the Piedmont and mountains, the flight starts around mid-April and extends to early November in the Piedmont and to mid-October in the mountains.

**HABITAT:** A wide array of ponds and other still water habitats, even slow-moving rivers -- especially where emergent vegetation is present.

**COMMENTS:** This is one of the state's most common damselflies, and one of the few that is numerous in truly coastal counties. Even so, it does not occur in large swarms.

## *Enallagma concisum* Cherry Bluet



**DISTRIBUTION:** The southern third/half of the Coastal Plain only, north to Craven Sampson, Cumberland, and Richmond counties. NC lies at the northeastern end of the species' range.

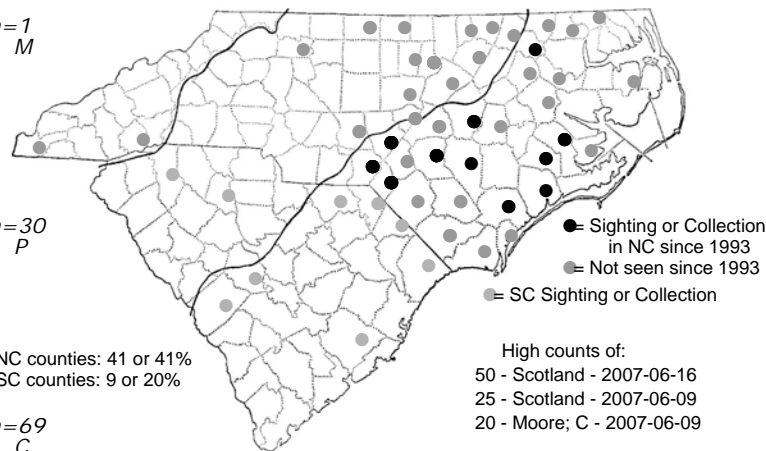
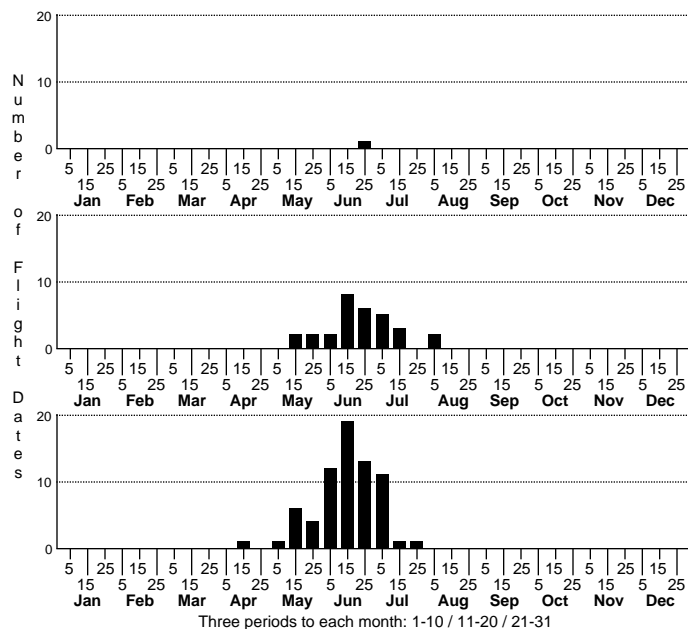
**ABUNDANCE:** Generally uncommon, but locally fairly common at a few sites, especially in the Sandhills region. There are several single-day counts of over ten individuals.

**FLIGHT:** The flight is moderately extended, from mid-April to late September.

**HABITAT:** Ponds or lakes with sandy bottoms, particularly where there is much emergent vegetation.

**COMMENTS:** There are quite a few "holes" in the county range map, suggesting that the species is a bit local in occurrence. Though it is given an S3? SRANK by the NC Natural Heritage Program, it might not quite warrant a Watch List status. At any rate, much more data are needed to clarify the range and abundance of this attractive damselfly.

## *Enallagma daeckii* Attenuated Bluet



Earliest date: Moore; C 2008-04-16  
 Latest date: Rockingham 1971-08-07

Status		Rank	
NC	US	NC	Global
-	-	S4	G4

**DISTRIBUTION:** Roughly the eastern half of the state. Specifically, nearly throughout the Coastal Plain (though perhaps absent in some Tidewater counties), the eastern third of the Piedmont, and very sparingly westward to include the extreme southern mountains. Presumed absent from the central and northern mountains; however, presumed to occur as a rarity in the western Piedmont counties.

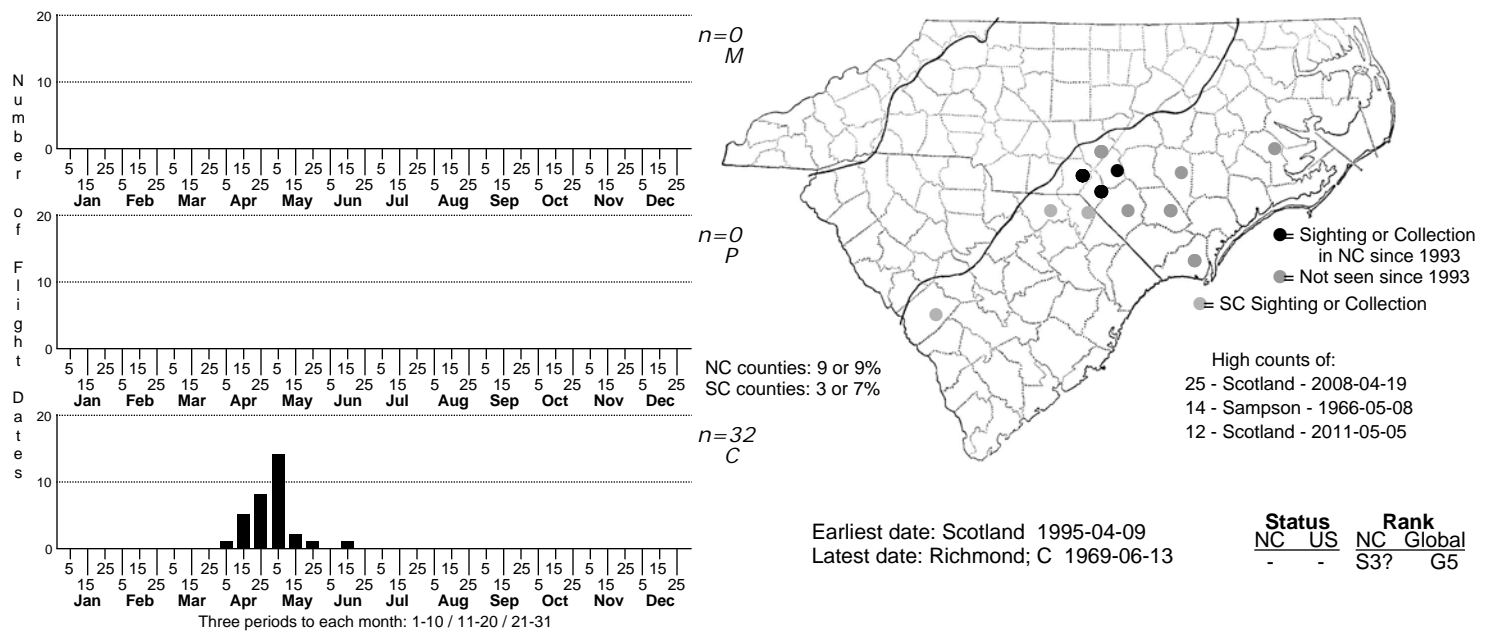
**ABUNDANCE:** Common in the Sandhills, but uncommon elsewhere in the western and central Coastal Plain, and rare in the far eastern counties. Rare in the eastern Piedmont, and very rare at best elsewhere in the Piedmont and southern mountains.

**FLIGHT:** A shortened flight for a bluet, seemingly not occurring after mid-summer. In the Coastal Plain, it occurs from mid-April to late July, and in the Piedmont from mid-May to early August. The only date record available for the mountains is for late June.

**HABITAT:** Sand-bottomed ponds and lakes, almost always in wooded areas and with shrubby margins.

**COMMENTS:** Several sizable single-day counts have been made in the Sandhills, but it isn't clear if the species is truly scarce away from this area. Despite there being at least 15 county records west of the Fall Line, there are no recent reports from this large area. The species is fairly distinctive in its "skinny" look, and thus it has possibly declined in the Piedmont. New records for the Piedmont are greatly needed.

## *Enallagma davisii* Sandhill Bluet



**DISTRIBUTION:** Primarily the Sandhills region, but sparingly east to the southeastern corner of the state. As NC lies at the northern end of the range, the current northern limits are Craven, Sampson, and Moore counties.

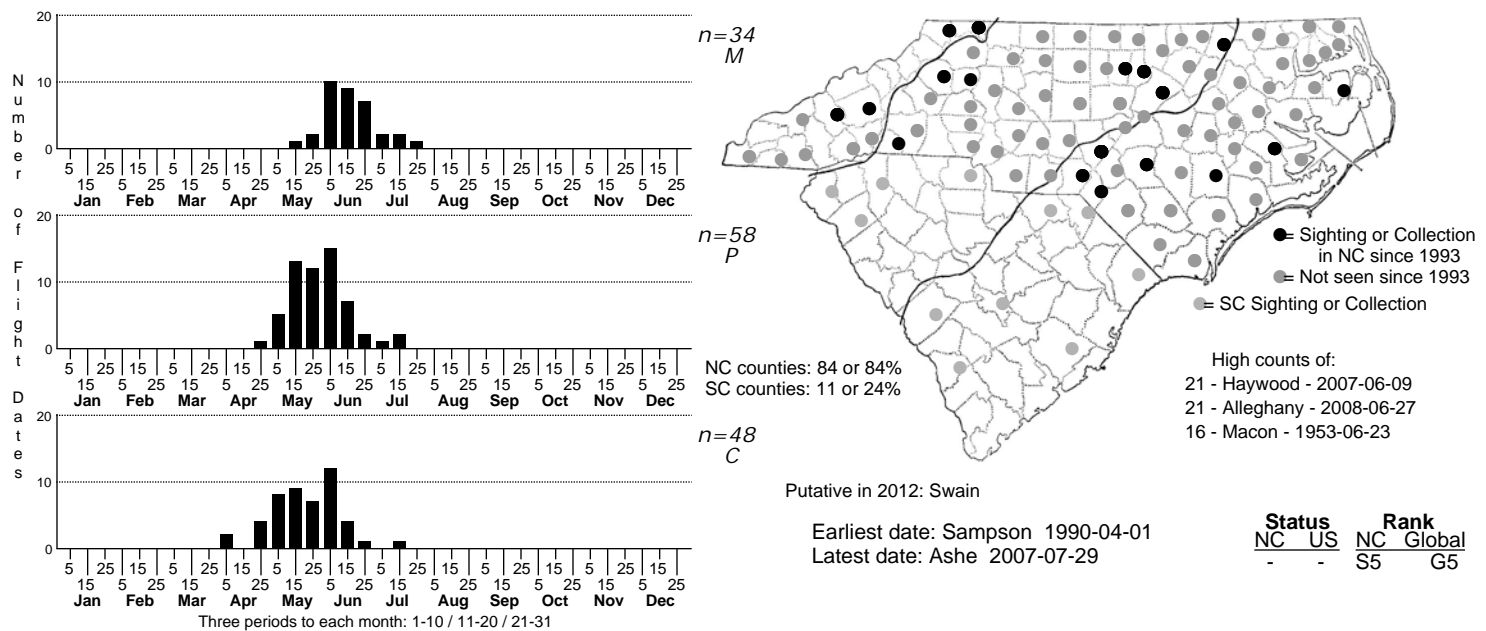
**ABUNDANCE:** Generally uncommon and local, eastward to Sampson and Bladen counties, and very rare east to Craven County. Fairly common at a few favored locales in the Sandhills.

**FLIGHT:** A spring-season flight only, unusual for a bluet. The flight occurs from early April to mid-June, but is mostly over by mid-May.

**HABITAT:** Sandy-bottomed lakes or large ponds, with emergent vegetation along the shore.

**COMMENTS:** Though there are many dragonflies with a flight period in the spring season only, there are few such "spring only" damselflies. As with the Cherry Bluet, the species does not seem quite scarce enough to be considered as a Watch List species by the NC Natural Heritage Program. Nonetheless, we have no recent records east of the Sandhills (Hoke County), and surprisingly there are no records yet for Cumberland County, much of which lies in the Sandhills region.

## *Enallagma divagans* Turquoise Bluet



**DISTRIBUTION:** Essentially statewide. Possibly absent in one to several high-elevation mountain counties, and possibly a county or two along the Outer Banks. Nonetheless, the assumption should be made that it occurs in all counties.

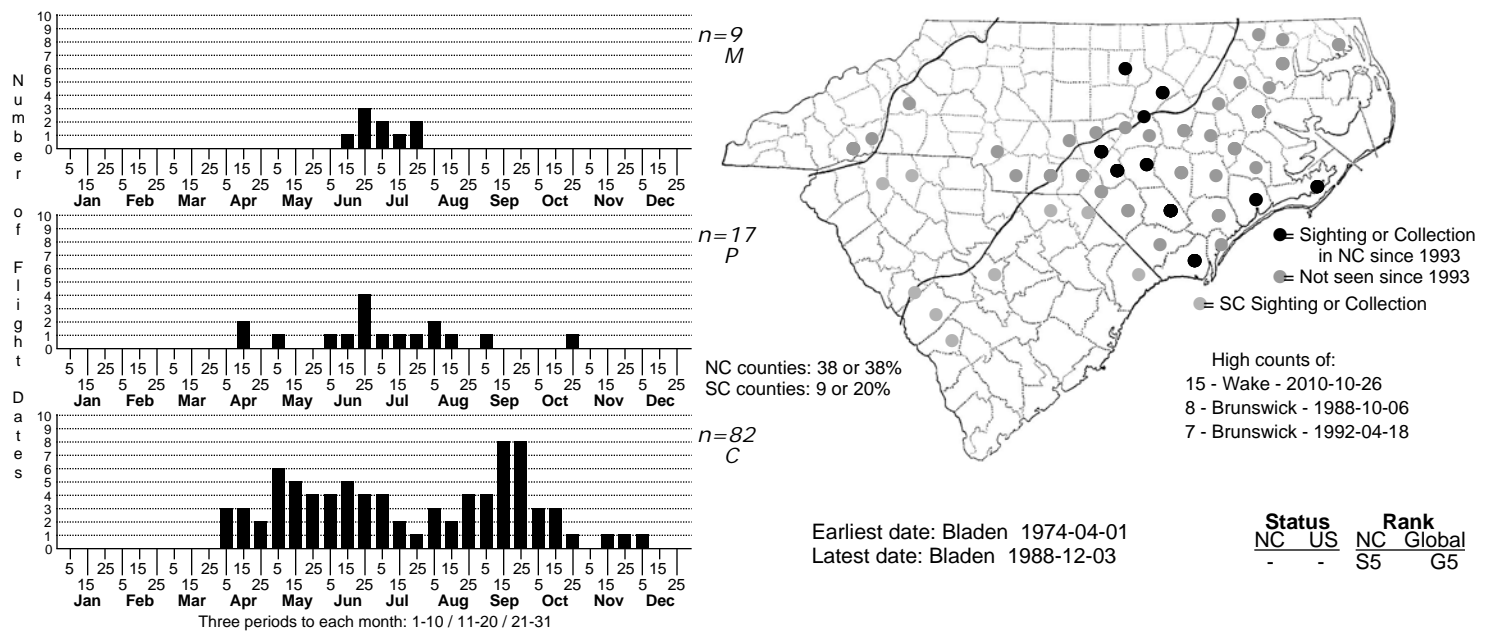
**ABUNDANCE:** Generally fairly common across the state, though certainly rare in the extreme eastern counties and in the higher elevations. As the peak one-day counts are only 21 individuals, the species is not really common anywhere, but at least it is widespread across most of the state.

**FLIGHT:** This is another bluet that ends its flight by mid-summer, as opposed to in the fall season. In the Coastal Plain, it occurs from early April only to mid-July. The Piedmont flight is from late April to mid-July, and the mountain flight is slightly later -- mid-May to late July. There are no August records as yet.

**HABITAT:** Varied. More often at slow-moving streams, but it also is found along pond and lake margins.

**COMMENTS:** Considering that our highest one-day counts have occurred in the mountains, it seems odd that the known counties for it there are spottily distributed. This suggests that the species can be numerous at the lower elevations (below 3,000 feet), but that at middle and high elevations can be quite scarce.

## *Enallagma doubledayi* Atlantic Bluet



**DISTRIBUTION:** Generally throughout the Coastal Plain, and the southeastern third of the Piedmont; also sparingly in the southern mountains. Seemingly absent over most of the northwestern half of the state, including most of the Piedmont and most of the central and northern mountains. This is basically an Atlantic slope species, not found west of the Appalachians and rarely within them.

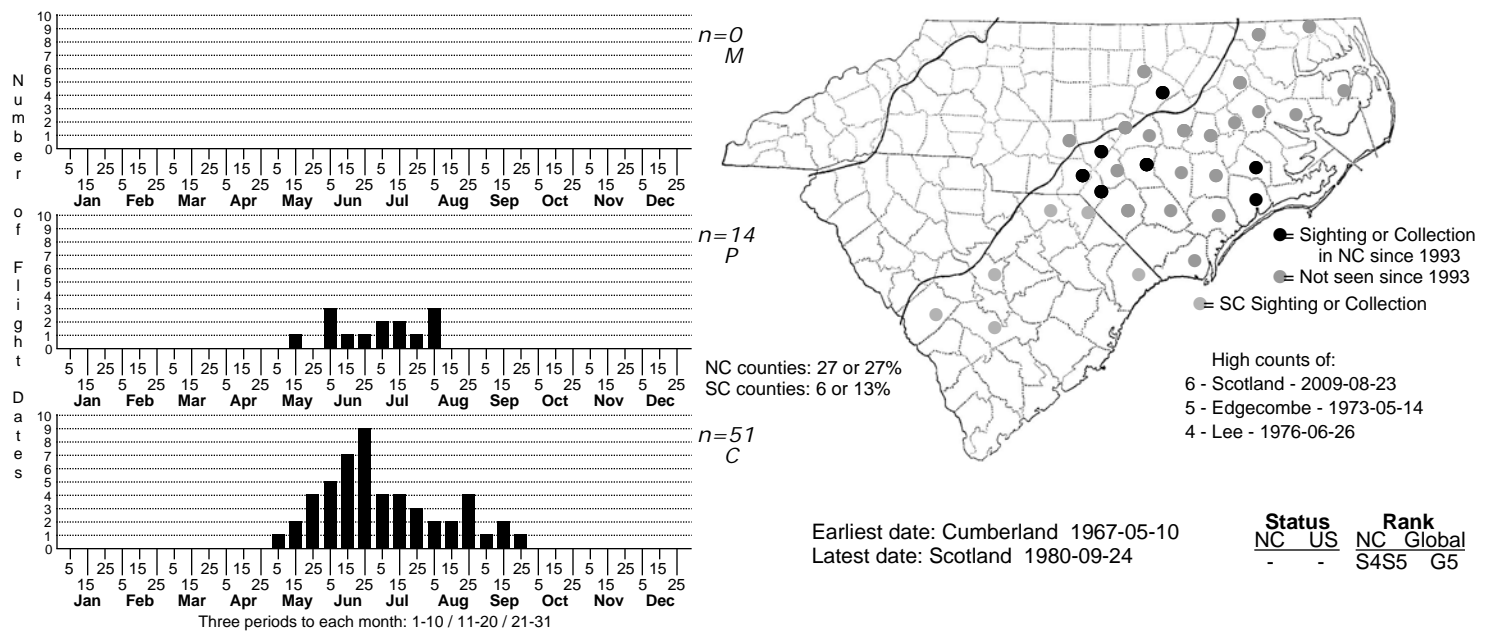
**ABUNDANCE:** Seemingly uncommon to fairly common, at least in the southern half of the Coastal Plain, but likely overlooked because of identification difficulties, especially with Familiar and Big bluets. Obviously rare in the extreme eastern Coastal Plain and the central Piedmont, and very rare west to McDowell, Henderson, and Transylvania counties.

**FLIGHT:** A very wide flight period, extending through the fall season. In the Coastal Plain, records occur from early April to early December. The relatively few Piedmont records fall between mid-April and late October, whereas mountain records occur only from mid-June to late July (so far).

**HABITAT:** A variety of ponds and lakes, rarely slow-moving creeks/rivers, at least where emergent vegetation is present. Mainly a pond species.

**COMMENTS:** Beaton (2007) notes that the species in GA is likely under-reported, and certainly the same can be said for NC. Though there are specimen records for about 35-38% of the counties, there are no posted photos on the website, suggesting that recent biologists have trouble distinguishing the species from other bluets by sight or even by photographs. Though it is certainly not even close to a Watch List species, much more data are desired to flesh out the range in the state, such as in the southern Piedmont and in the far-eastern Coastal Plain. Interestingly, Paulson (2011) calls it common, and the 82 records with dates for the Coastal Plain suggest that it must be fairly common there, at least through collection records.

## *Enallagma dubium* Burgundy Bluet



**DISTRIBUTION:** Scattered over nearly all of the Coastal Plain, and sparingly into the extreme eastern Piedmont. Absent from the western half of the state, and possibly absent in northern coastal areas.

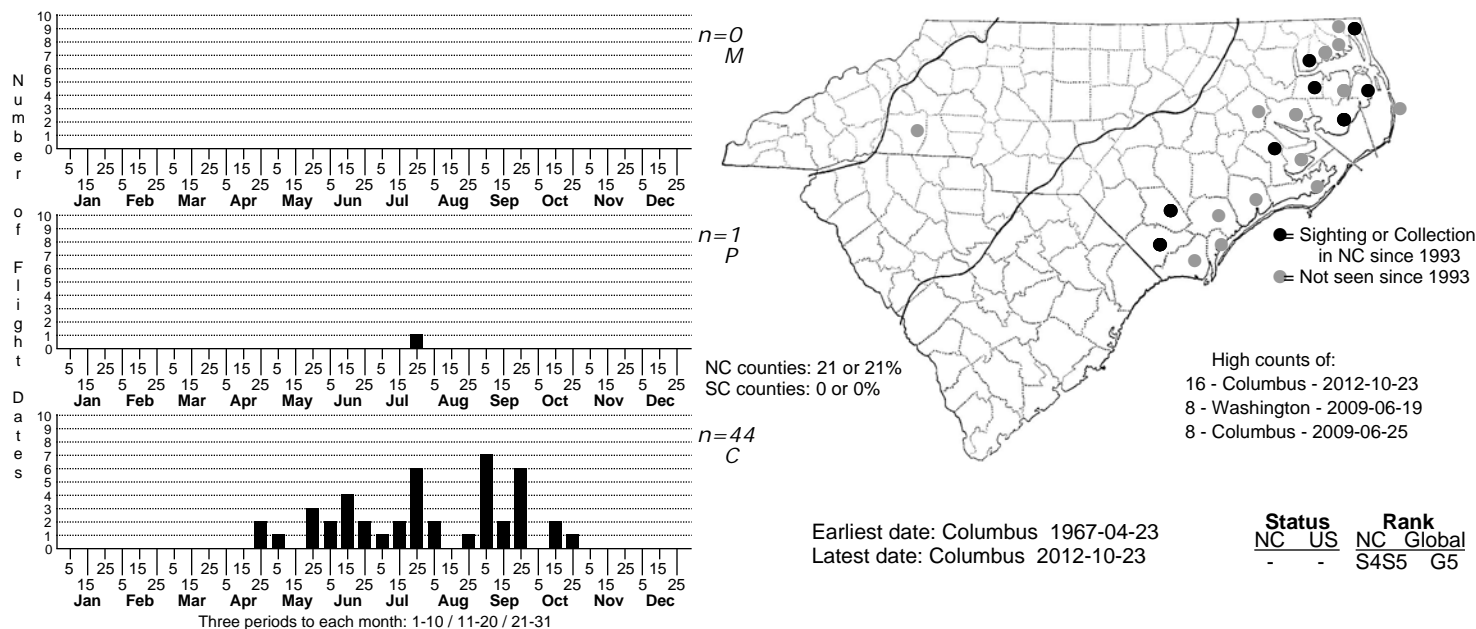
**ABUNDANCE:** Generally uncommon in the southern half of the Coastal Plain, and rare and of spotty occurrence in the northern half. Rare to uncommon in the narrow Piedmont portion of the range. The highest single-day count is only six individuals, supporting its "uncommon" status.

**FLIGHT:** The Coastal Plain flight occurs from early May to late September, whereas that in the adjacent Piedmont is from mid-May to early August.

**HABITAT:** Generally in highly vegetated ponds or small lakes, especially with floating vegetation such as lily pads.

**COMMENTS:** The male has a red and black thorax, fairly similar to that of the Cherry Bluet. For whatever reason -- difficulty in separating it from the Cherry Bluet? -- we have very few recent records. But, because it has been collected from at least half of the Coastal Plain counties, it certainly is not rare in the state.

## *Enallagma durum* Big Bluet



**DISTRIBUTION:** Primarily the eastern half of the Coastal Plain; generally absent from the western half of the Coastal Plain counties, and absent from the Sandhills. Absent in the mountains and Piedmont, except for a record from Rutherford County. As would be expected from the NC range, this species' US range is mainly limited to tidal and estuarine areas, north to ME, though it does occur over most of peninsular FL. In addition, Paulson (2011) shows scattered records for TN and central GA, and thus the collection record for Rutherford County might be legitimate.

**ABUNDANCE:** Locally fairly common in coastal counties and those in the Tidewater zone, as there are several one-day counts of at least eight individuals. Rare farther inland (such as in Bladen County), though our highest daily count is from "inland" Columbus County.

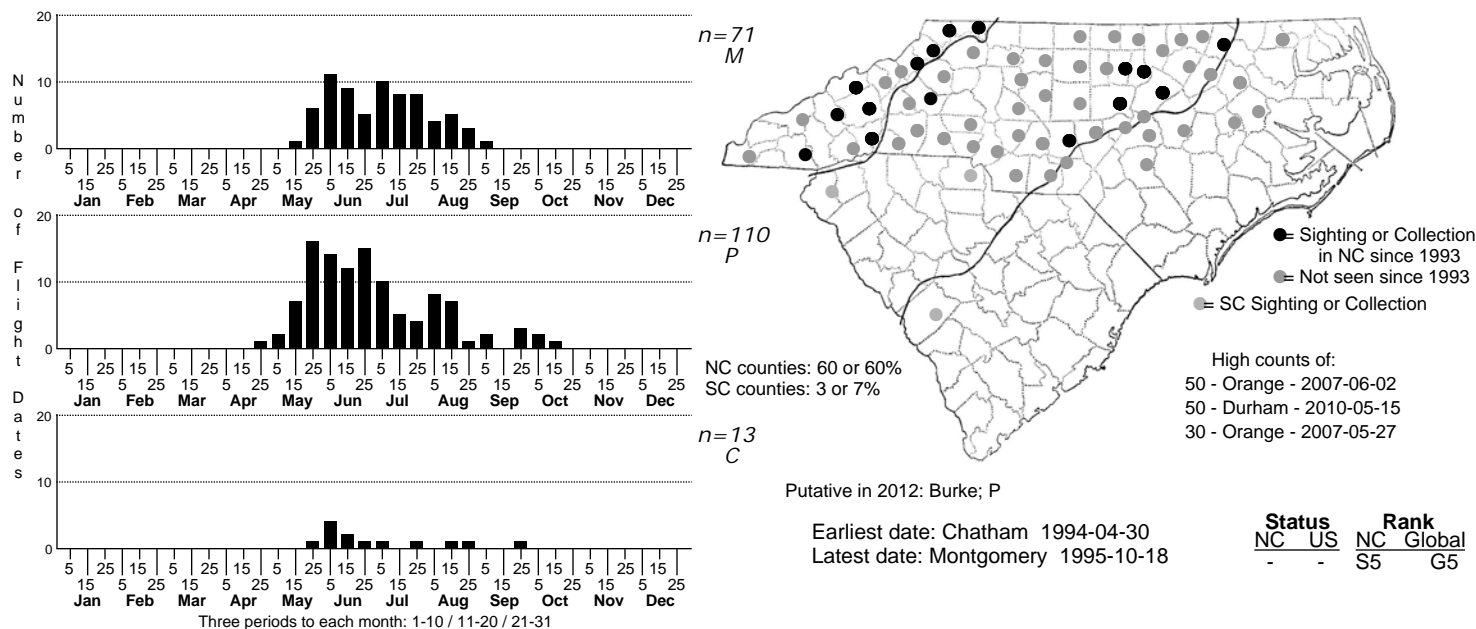
**FLIGHT:** The flight occurs from late April to late October. The Rutherford County record is for late July.

**HABITAT:** Unusual for most damselflies -- mainly along the lower portions of large rivers near or at estuaries, including the vicinity of brackish marshes. Also at large lakes with sandy bottoms, such as Lake Waccamaw.

**COMMENTS:** This species has a range in NC like no other damselfly, but quite a bit like several dragonflies, particularly Needham's Skimmer, Four-spotted Skimmer, and Seaside Dragonlet.



## *Enallagma exsulans* Stream Bluet



**DISTRIBUTION:** Throughout the mountains and Piedmont; also in the upper Coastal Plain, east to Hertford, Pitt, and Cumberland counties.

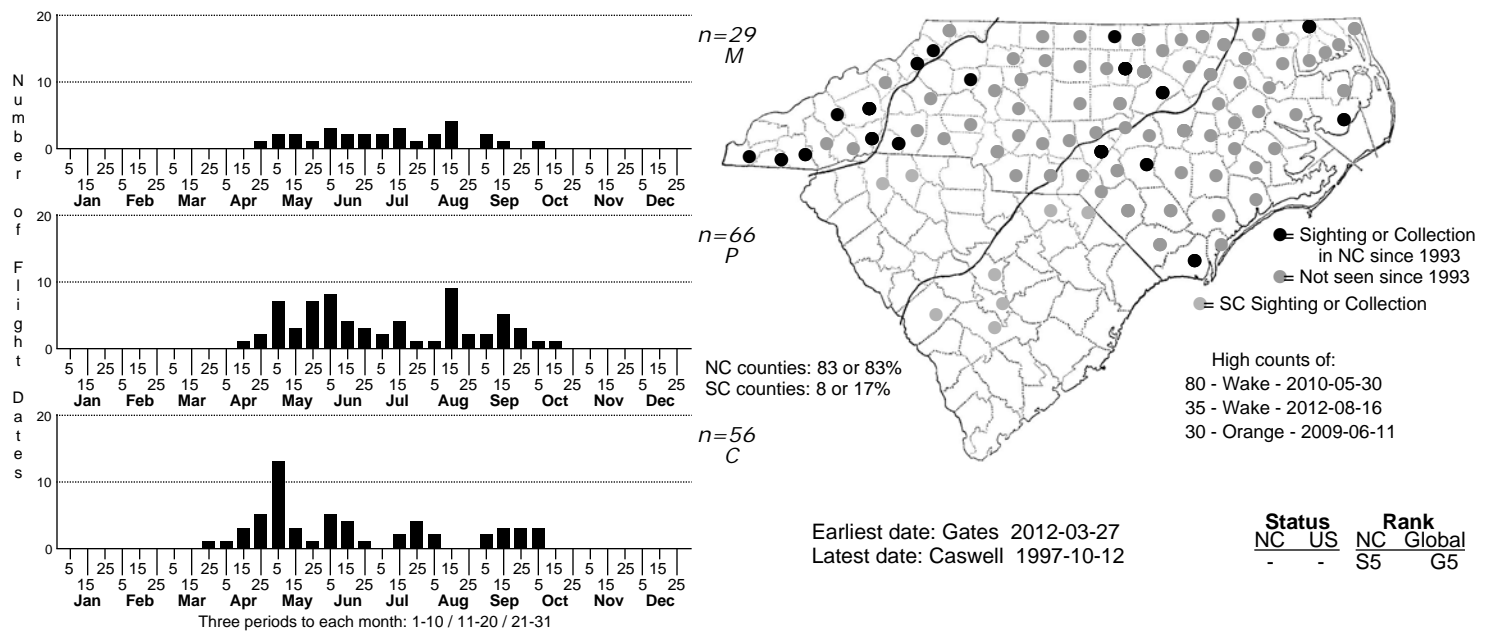
**ABUNDANCE:** Common, at least locally, in the mountains and Piedmont; rare in the Coastal Plain portion of the range.

**FLIGHT:** Late April to mid-October in the Piedmont, and mid-May to at least early September in the mountains. The relatively few dates from the Coastal Plain fall between late May and late September, though the flight ought to be similar to that in the Piedmont.

**HABITAT:** A wide variety of creeks and rivers, with slow to moderate current.

**COMMENTS:** This species generally avoids lakes, ponds, and other still waters -- unlike nearly all other bluets.

## *Enallagma geminatum* Skimming Bluet



**DISTRIBUTION:** Essentially statewide, though of spotty distribution in the mountains and upper Piedmont, and close to the coast. However, it likely occurs in all 100 counties.

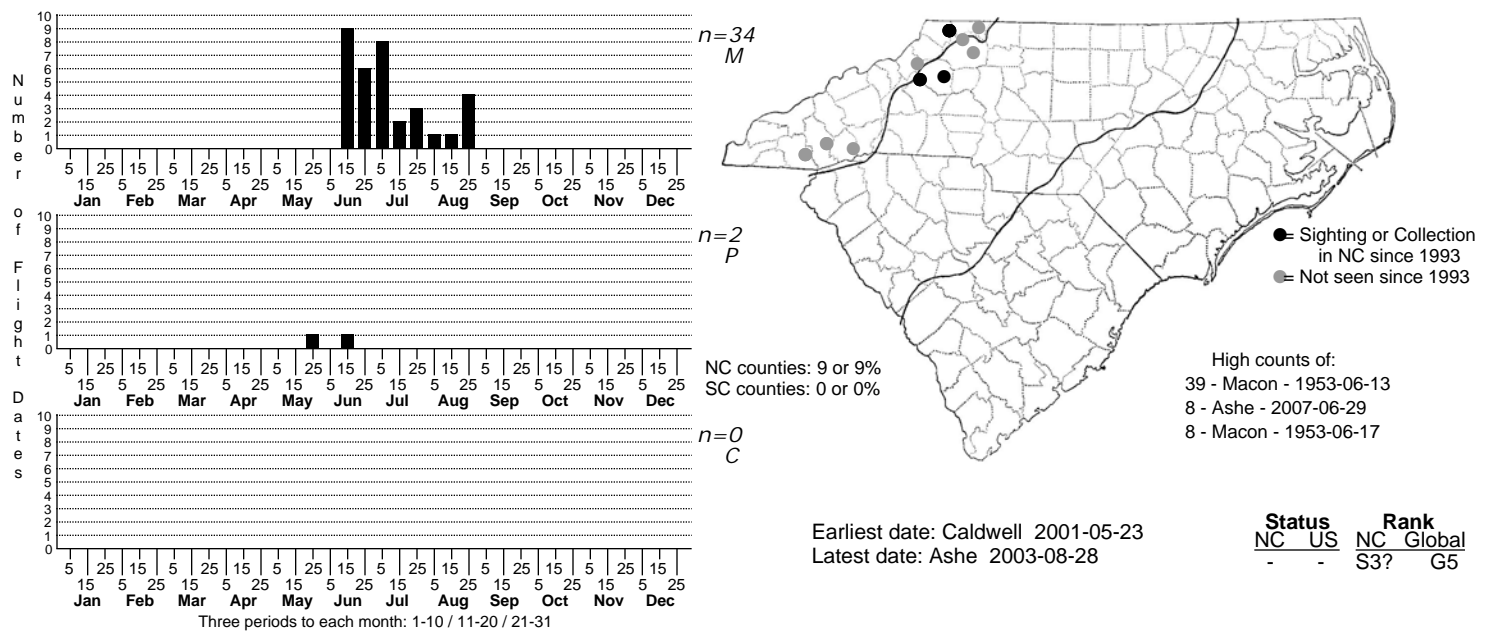
**ABUNDANCE:** Fairly common statewide, and locally common (several daily counts over 30 individuals). Not obviously more numerous in one province over another, though the spotty county distribution in the mountains suggests that it may be less numerous there than downstate.

**FLIGHT:** A long flight season, from late March or early April to mid-October, downstate. In the mountains, it flies from late April to early October.

**HABITAT:** A variety of still, open waters, typically lakes and ponds, especially where there are lily pads or other floating vegetation.

**COMMENTS:** Additional field work in the western third of the state ought to provide new county records. However, there are fewer lakes and ponds in that part of the state that contain water lilies and other floating vegetation, not that this is a requirement to find this bluet.

## *Enallagma hageni* Hagen's Bluet



**DISTRIBUTION:** Essentially throughout the mountains, and likely the extreme upper Piedmont foothills. Not surprisingly, NC lies at the southern end of the species' range, it not having yet been recorded from SC, and just at one site in extreme northeastern GA.

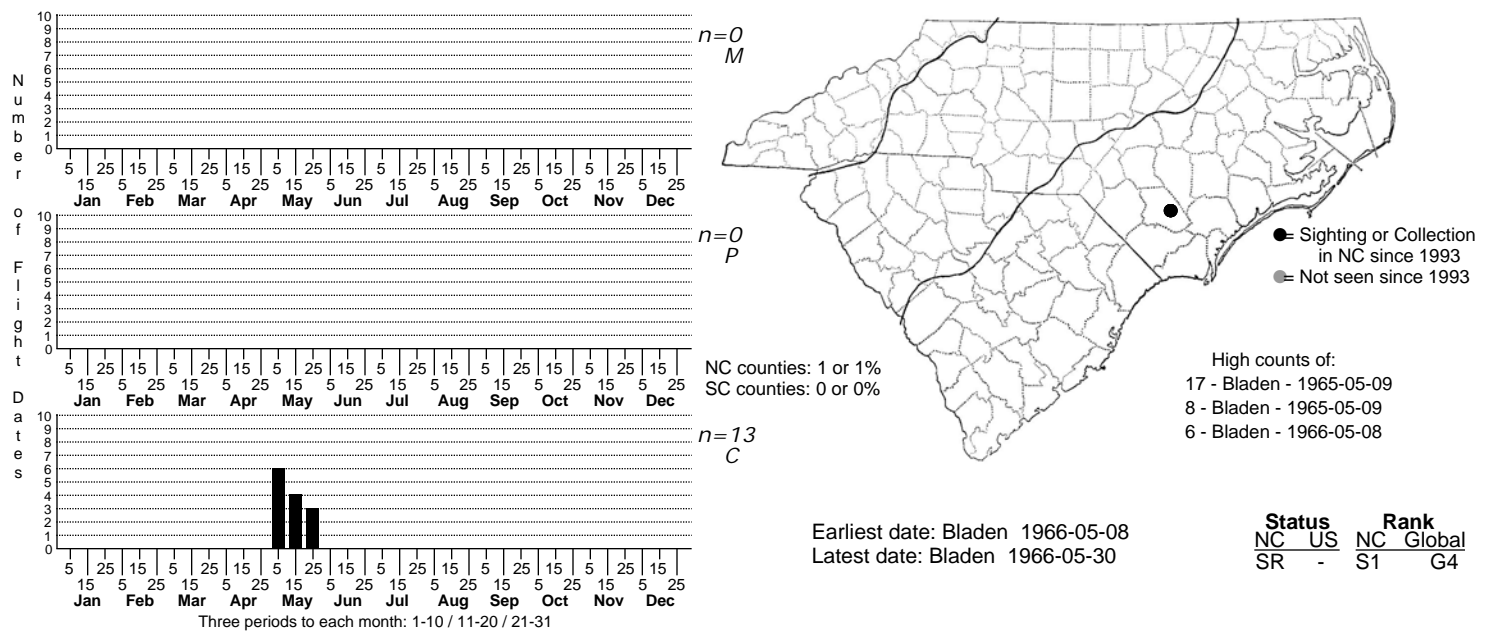
**ABUNDANCE:** Uncommon and seemingly local in the mountains, and very rare in the upper parts of Piedmont foothill counties. Interestingly, there is a count of 39 individuals from Macon County; thus, it isn't overly rare in parts of the southern mountains. Paulson (2011) says "Often most common species at large northern lakes." Of course, such is not the case in NC, at the southern edge of the range.

**FLIGHT:** The NC records in the mountains fall between mid-June and late August, though the flight there likely starts in May. The few Piedmont records are only for late May and mid-June.

**HABITAT:** Ponds, small lakes, and other open water with much emergent vegetation; often at bogs and marshes.

**COMMENTS:** Though there are numerous dragonflies that occur in NC only in the mountains, there are very few such damselflies with this type of range. The lack of recent records south of Ashe and Caldwell counties is somewhat of a concern, though this likely represents poor recent coverage in its habitats, as man-made ponds and small lakes are likely increasing.

## *Enallagma minusculum* Little Bluet



**DISTRIBUTION:** Largely disjunct population, known only from White Lake in Bladen County; the major portion of the range is Northeastern, south only to Long Island, NY. Thus, this NC record might represent an introduction.

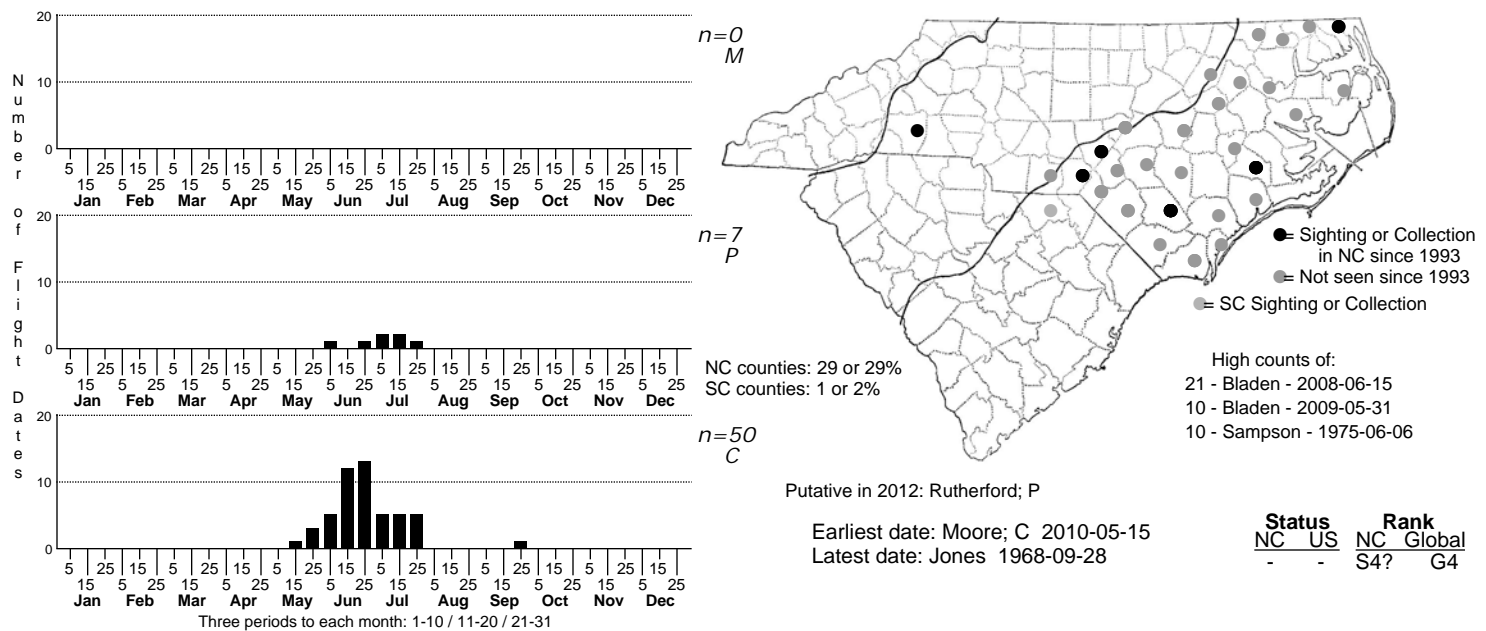
**ABUNDANCE:** Can be common along lakeshores with emergent vegetation, within its main range. If it still occurs in NC, it likely must be quite local and rare, especially as nearly all records were over 25 years ago, and most of the shoreline of White Lake is heavily developed.

**FLIGHT:** The 13 dates for NC fall within a narrow time window -- early May to late May.

**HABITAT:** Floating or emergent vegetation along lakeshores.

**COMMENTS:** This is likely the rarest damselfly in NC, if it still exists. The last observation was May 1997, thus giving hope that it still occurs around White Lake. Coordinated efforts should be made to re-survey White Lake and other bay lakes in Bladen and nearby counties from early May until mid-June. Obviously, other bay lakes in Bladen County have been well-worked over the past few decades -- Jones, Baytree, Singletary, etc.; yet, there are no records for them, the reason a few biologists wonder why a northern species would be disjunct far to the south at only White Lake, and not at other similar lakes.

## *Enallagma pallidum* Pale Bluet



**DISTRIBUTION:** Essentially limited to the Coastal Plain, where it likely occurs in all counties (though there are records for only 55-60% of them). Also occurs sparingly in the extreme southeastern Piedmont, near the Sandhills region. A sight report for Rutherford County, in the far-western Piedmont, is open to question, as there are no similar upper Piedmont records for SC or GA.

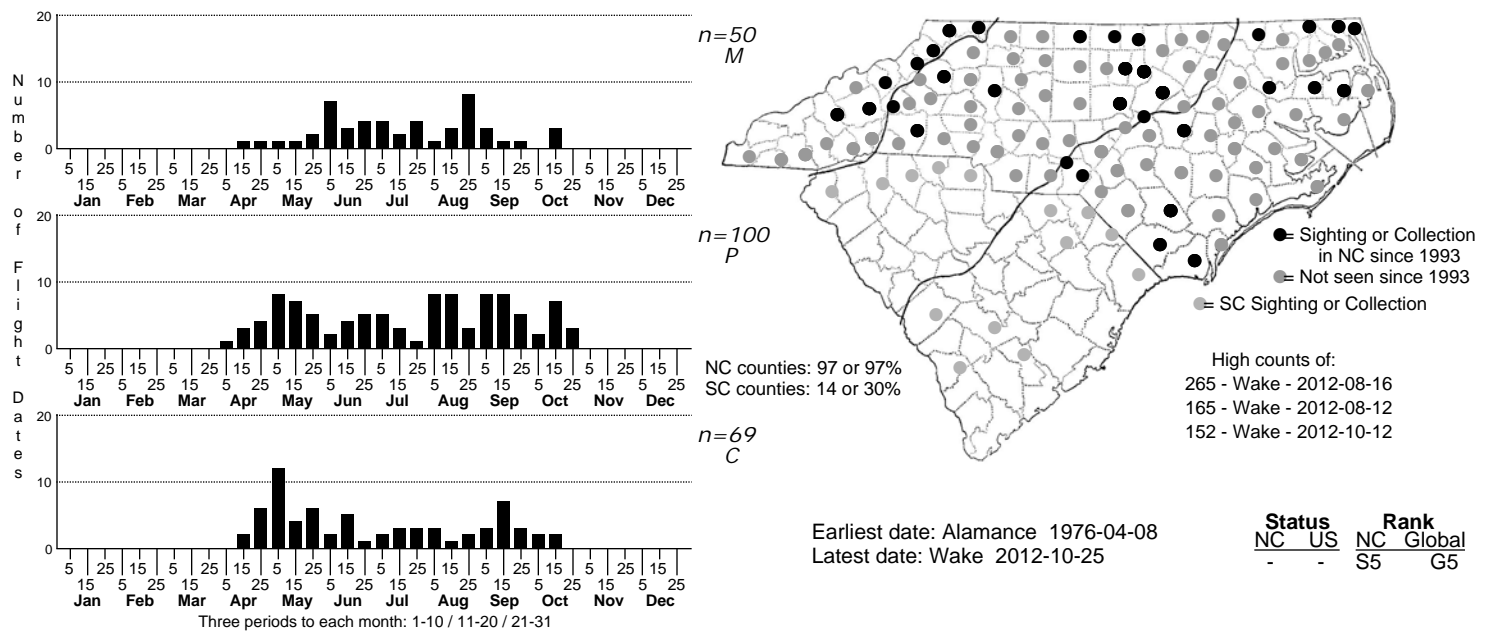
**ABUNDANCE:** Uncommon to locally fairly common in the southern Coastal Plain -- Sandhills area east to Bladen County, but generally rare elsewhere in the state, and probably very rare toward the coast.

**FLIGHT:** In the Coastal Plain, the flight occurs between mid-May and late July, with a collection record from late September being quite late. The few flight dates for the Piedmont occur from early June to late July.

**HABITAT:** Lakes and ponds, especially where there are shrubby or swampy areas around the waters.

**COMMENTS:** There are relatively few recent observations of the species, and no known photographs, but there are few biologists looking for damselflies in the Coastal Plain in recent years. It is hoped that more county records in the Coastal Plain can be documented. Some form of documentation for the Rutherford County report is needed, as it seems that the species is absent from the Piedmont throughout its range, except immediately along the Fall Line.

## *Enallagma signatum* Orange Bluet



**DISTRIBUTION:** Statewide, lacking records from just three mountain counties. Certainly present in all 100 counties. Unlike many damselflies with a "statewide" range, this species has been recorded from all coastal counties.

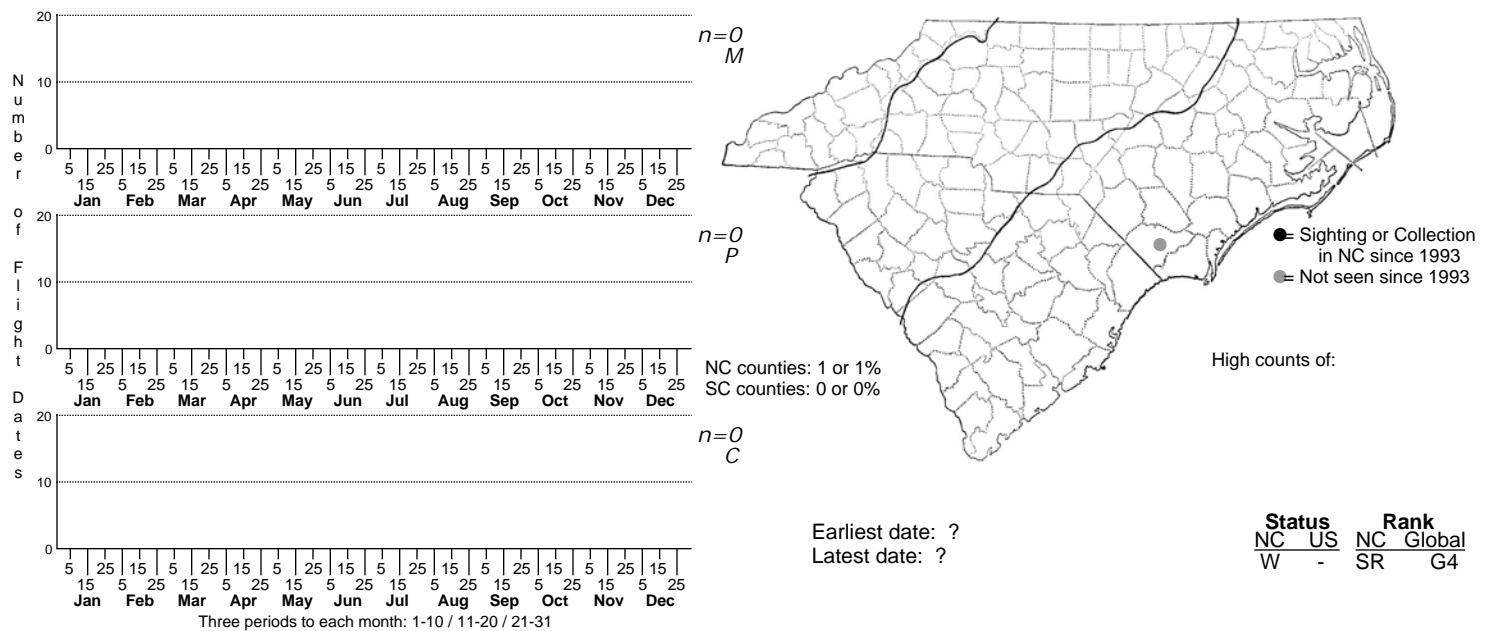
**ABUNDANCE:** Common and widespread in the Coastal Plain and Piedmont; locally abundant in a few areas. Fairly common to perhaps locally common in the mountains.

**FLIGHT:** A long flight period -- early or mid-April to mid-October, in all three provinces.

**HABITAT:** A broad range of lakes, ponds, and slow-moving streams.

**COMMENTS:** This is as widespread in the state as any damselfly, and is reasonably common as well. The orange color on the male is quite noticeable.

## *Enallagma sulcatum* Golden Bluet



**DISTRIBUTION:** Specimen known from Columbus County (generally presumed to be Lake Waccamaw), though this record does not show up in the list of specimens housed at the University of Florida, where all of Duncan Cuyler's specimens are housed. Paulson (2011), however, show a dot for southeastern NC in the range map in his book. This species is limited to the Gulf Coast region, from southern AL to central FL; the nearest population is northern FL.

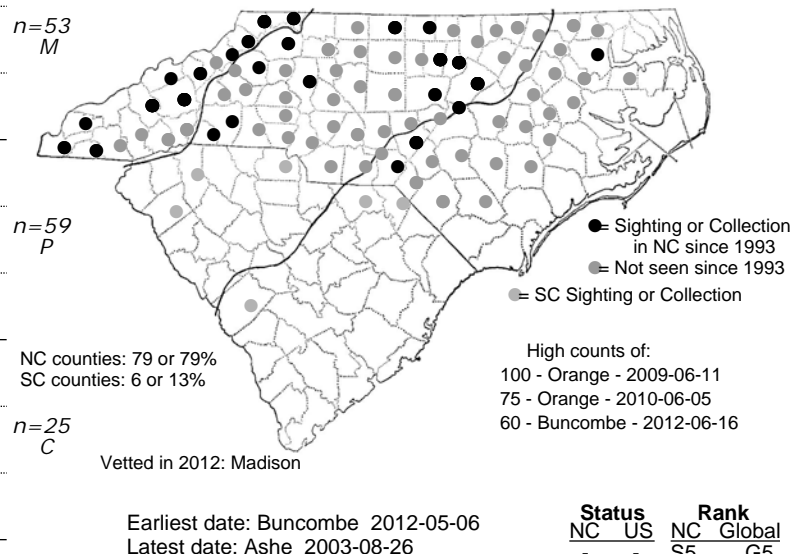
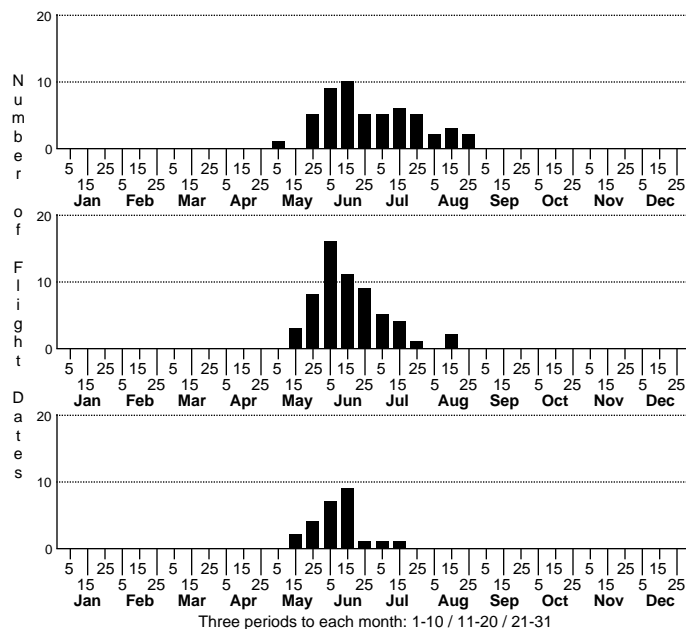
**ABUNDANCE:** Unknown in the state; can be very abundant in FL. It is possibly extirpated from the state, if it ever were positively documented from the state.

**FLIGHT:** In FL, flies from February to November. The flight in NC is unknown.

**HABITAT:** Sand-bottomed lakes with lots of shore vegetation (including grasses and lily pads).

**COMMENTS:** This, along with the Little Bluet, may be the most poorly known damselfly in NC. However, unlike the northern Little Bluet, it is more likely that a southern species of large natural sand-bottomed lakes (Florida) would be disjunct to NC, which does have such lakes in Bladen and Columbus counties. GA and SC have very few such sand-bottomed natural lakes. Because of the concern about whether it truly occurred naturally in NC, and because the whereabouts of the specimen(s) is not known, the NC Natural Heritage Program moved the species from the Rare List (Significantly Rare) to the Watch List in 2012, with a rank of "State Reported".

# *Enallagma traviatum* Slender Bluet



**DISTRIBUTION:** Throughout the mountains and Piedmont, and over the western half of the Coastal Plain, barely reaching the counties along the western part of Albemarle Sound.

**ABUNDANCE:** Fairly common, to locally common, over the mountains and Piedmont; uncommon in the Coastal Plain, with but one recent report. More numerous in the mountains than downstate.

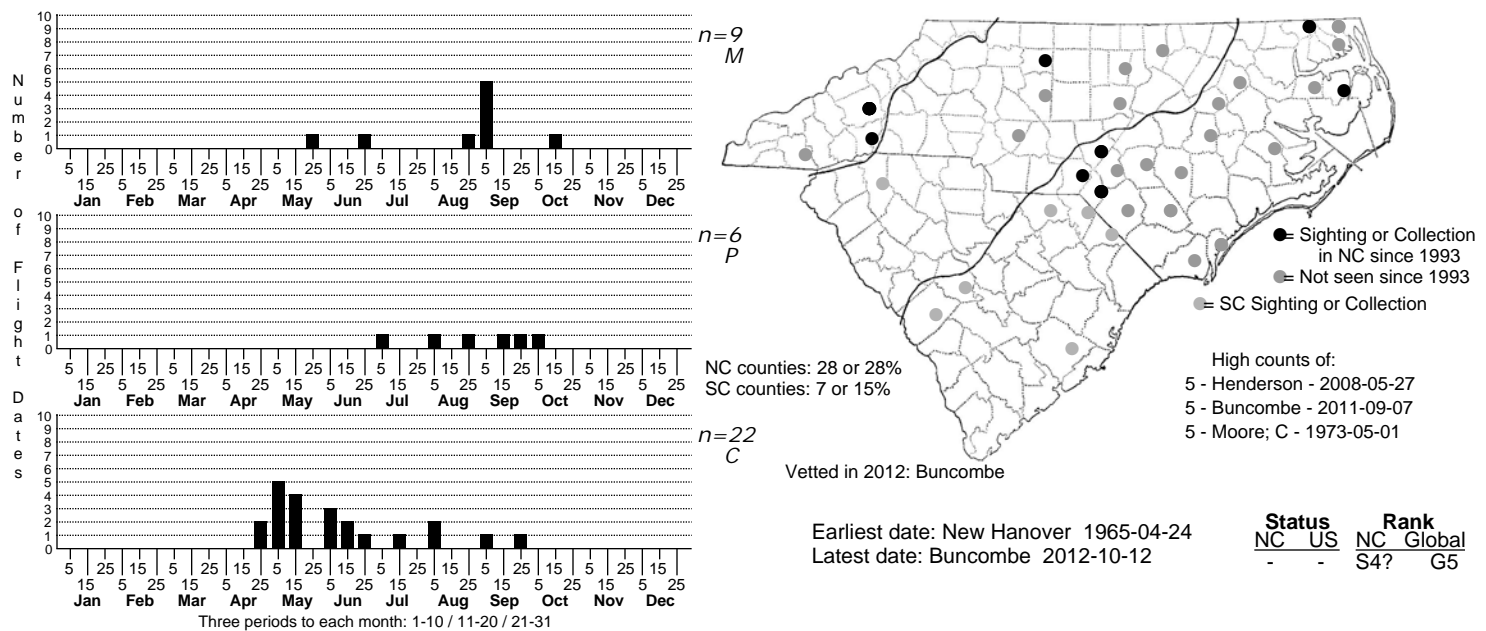
**FLIGHT:** Early May to late August in the mountains, and likely so also downstate. However, Piedmont records fall only from mid-May to mid-August, and Coastal Plain records only to mid-July.

**HABITAT:** A variety of lakes and ponds, typically with emergent vegetation.

**COMMENTS:** As with so many of our damselflies, there are few people looking for them in recent years in the Coastal Plain; thus, it is no surprise that there are collection records for about half of these counties, with but a single recent flight date record.



## *Enallagma vesperum* Vesper Bluet



**DISTRIBUTION:** Widely scattered over the Coastal Plain and the eastern and central Piedmont, plus the southern mountains. Apparently absent from the northern half of the mountains and a portion of the northwestern Piedmont. Range maps (Paulson 2011, Beaton 2007), etc., are overly broad-brushed to show the entire eastern half of the US as the range of the species, including all of NC.

**ABUNDANCE:** Rare to locally uncommon over the range in the state. The many counties in the Coastal Plain and Piedmont where it has yet to be recorded attests to the difficulty of finding the species in the state.

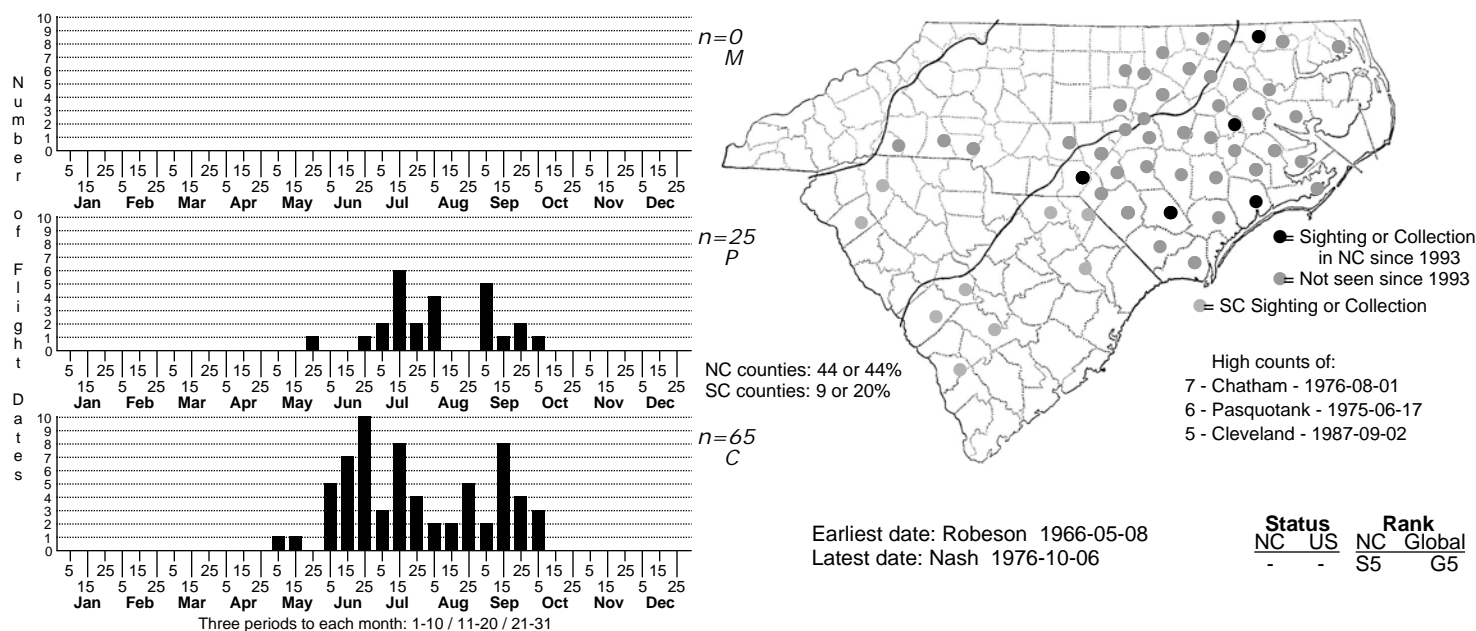
**FLIGHT:** In the Coastal Plain, it occurs from late April to late September. The few Piedmont dates fall between early July and early October, though it certainly occurs by May. In the mountains, the few records fall from late May to mid-October.

**HABITAT:** Lakes or ponds, typically where forests are nearby, for perching. Waters with lily pads are often used.

**BEHAVIOR:** As the name implies, the species flies mainly in late afternoon into twilight.

**COMMENTS:** The unusual daily flight timing is perhaps responsible for the scarcity of records for this otherwise geographically widespread species, which ranges from the Gulf Coast north to southern Canada. Males have a bright yellow thorax.

## *Enallagma weewa* Blackwater Bluet



**DISTRIBUTION:** Nearly throughout the Coastal Plain, and the extreme eastern and southern Piedmont. Absent from the mountains and the northwestern half of the Piedmont. Perhaps absent in a few counties in the northeastern Coastal Plain, such as those around Albemarle Sound.

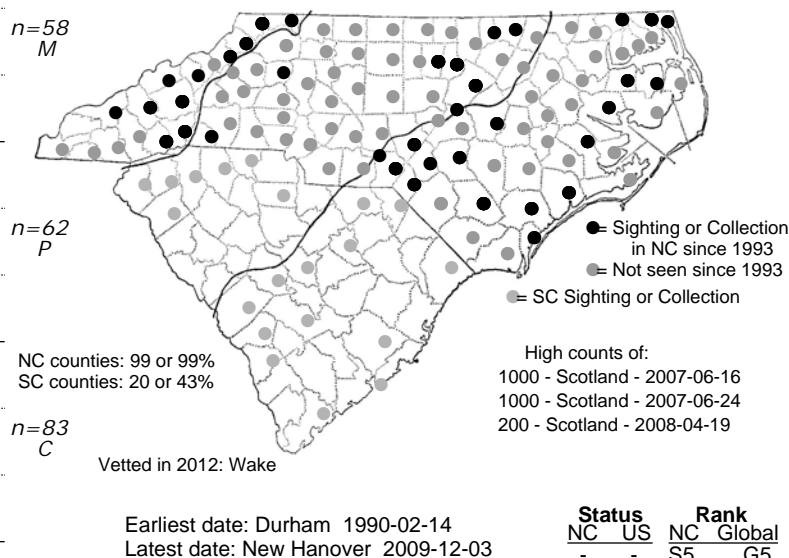
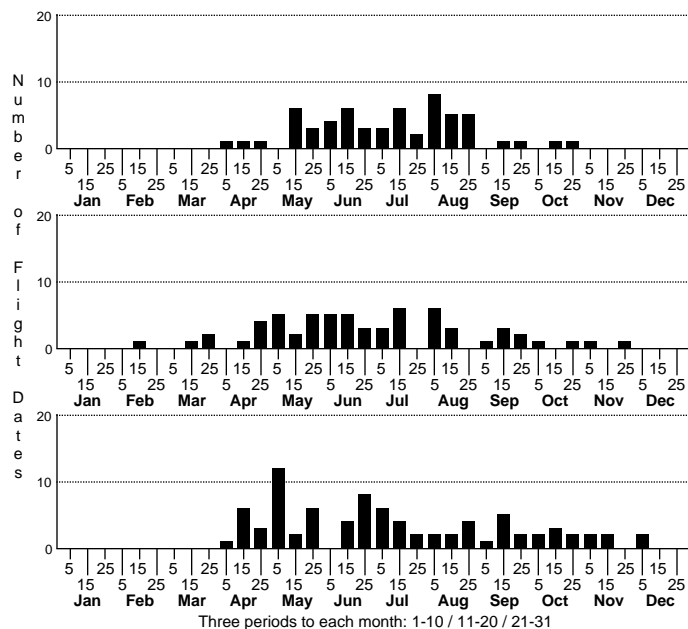
**ABUNDANCE:** Though recorded from most Coastal Plain and lower Piedmont counties, suggesting that it isn't rare, there are very few recent reports, and no photographs. Thus, presumed to be uncommon and overlooked within the range.

**FLIGHT:** In the Coastal Plain, the flight occurs from early May to early October, and the Piedmont flight is similar, though the earliest record is from late May.

**HABITAT:** Unusual for a damselfly: as the name suggests, it is found around blackwater (acidic) streams, rarely around larger rivers and lakes, but again with tannic (acidic) waters.

**COMMENTS:** It seems remarkable that Cuyler, and possibly others, have collected the species from 40 or more counties, yet there are very few recent observations. Again, there has been very little field work for damselflies in the Coastal Plain in recent decades, a sad commentary indeed.

# *Ischnura hastata* Citrine Forktail



**DISTRIBUTION:** Statewide, undoubtedly found in all 100 counties (though no record yet for Graham County).

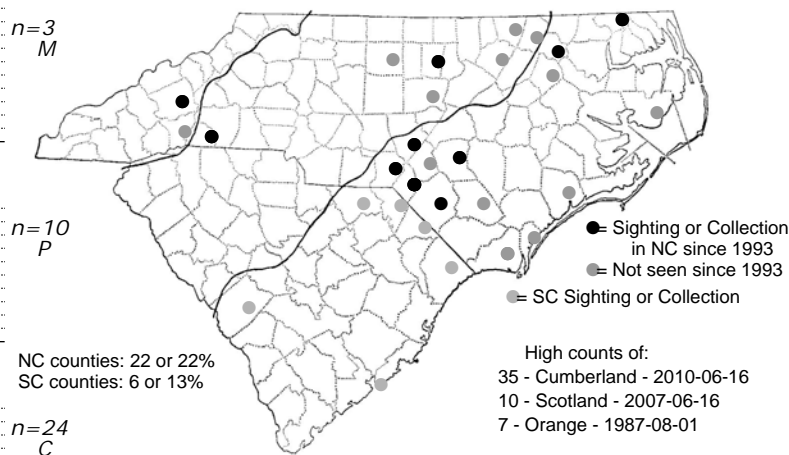
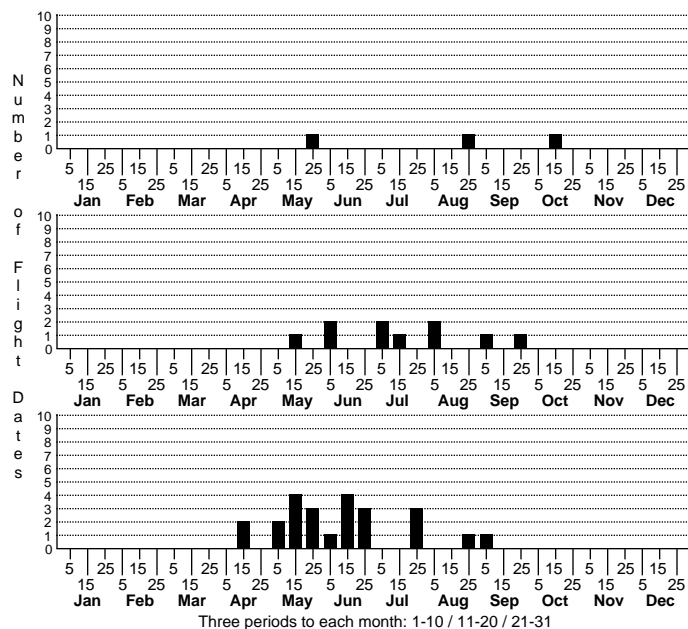
**ABUNDANCE:** Common to abundant in the Coastal Plain, and common westward. There are several counts of 1,000 individuals in a day, and others with over 100 individuals.

**FLIGHT:** A very long flight period -- early April to early November, and one record for early December. There is also a record for mid-February in the Piedmont.

**HABITAT:** Lakes or ponds with much grassy vegetation around the margins; bogs, marshes. May also be found along slow-moving rivers.

**COMMENTS:** This is certainly one of the most abundant odonates (not just damselflies) in NC, from the coast to the mountains.

# *Ischnura kellicotti* Lilypad Forktail



Earliest date: Robeson 1997-04-13  
Latest date: Buncombe 2011-10-17

Status	Rank
NC US	NC Global
- -	S3S4 G5

**DISTRIBUTION:** Spottily distributed over most of the Coastal Plain and the eastern third of the Piedmont; also sparingly in the southern mountains and southern foothills. Many gaps in the range (records for less than half of the counties within the Coastal Plain and Piedmont portion of the range).

**ABUNDANCE:** Uncommon to at least locally fairly common in the Sandhills. Rare to locally uncommon elsewhere in the Coastal Plain and eastern Piedmont. Rare in the foothills/mountain part of the range.

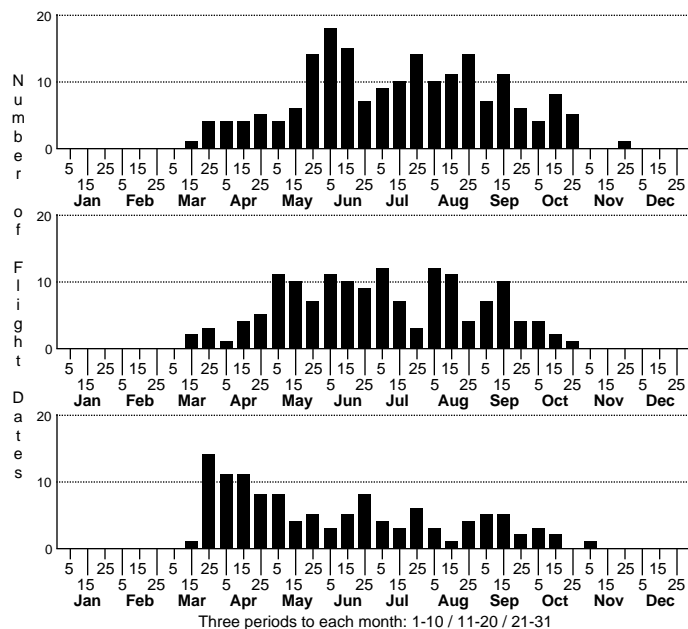
**FLIGHT:** In the Coastal Plain, it occurs from mid-April to early September. The Piedmont flight occurs from mid-May (and likely earlier) to late September. The few mountain dates fall from late May to mid-October, suprisingly late.

**HABITAT:** As the common name implies, it is essentially found only at lakes or ponds with lilypads.

**BEHAVIOR:** Adults can be identified by their habit of curving the abdomen such that the club typically touches the lilypad.

**COMMENTS:** There is much opportunity for biologists to "fill in the holes" in the range map with new county records. Though the species is considered to be "Common below the Fall Line" in GA (Beaton 2007), it certainly is not so in NC.

## *Ischnura posita* Fragile Forktail

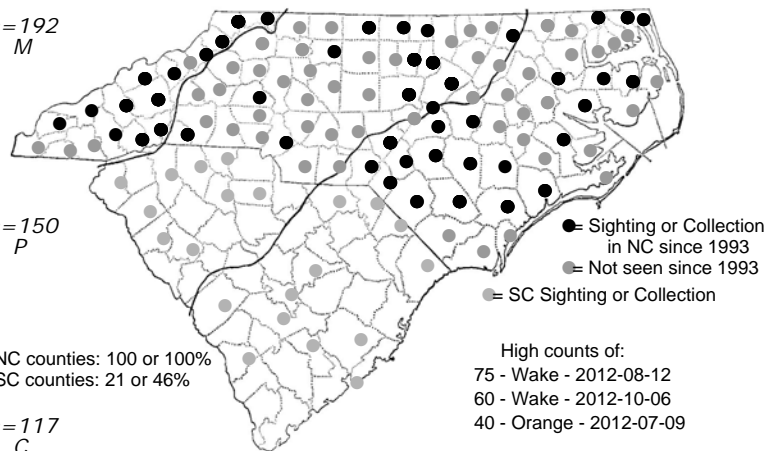


$n=192$   
M

$n=150$   
P

$n=117$   
C

NC counties: 100 or 100%  
SC counties: 21 or 46%



High counts of:  
75 - Wake - 2012-08-12  
60 - Wake - 2012-10-06  
40 - Orange - 2012-07-09

Earliest date: Harnett; P 2006-03-11  
Latest date: Buncombe 2011-11-25

Status		Rank	
NC	US	NC	Global
-	-	S5	G5

**DISTRIBUTION:** Statewide, recorded from all 100 counties.

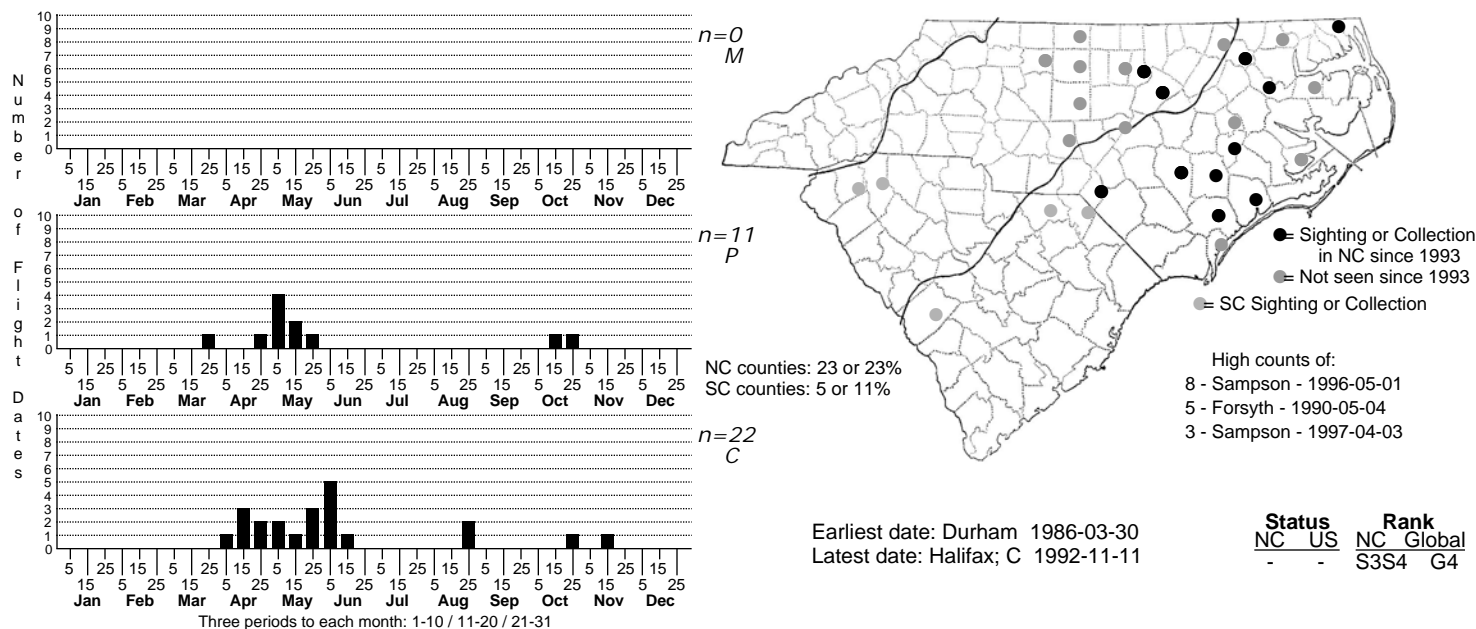
**ABUNDANCE:** Common to very common; arguably the most widespread and frequently seen damselfly in the state, though not occurring in the abundance that the Citrine Forktail can be found. (For example, there are over 450 records for the species, though the peak single-day count is "just" 75 individuals.)

**FLIGHT:** As with many forktails, the flight is very long -- mid-March to late October, and sparingly into November.

**HABITAT:** A wide variety of wet grassy areas, typically around pond or lake margins, slow-moving streams, etc.

**COMMENTS:** As with the Citrine Forktail, this is an easily found species, all across the state for most of the warmer months.

## *Ischnura prognata* Furtive Forktail



**DISTRIBUTION:** Scattered over most of the Coastal Plain and the eastern half of the Piedmont. Recorded from slightly fewer than half of the counties within this range.

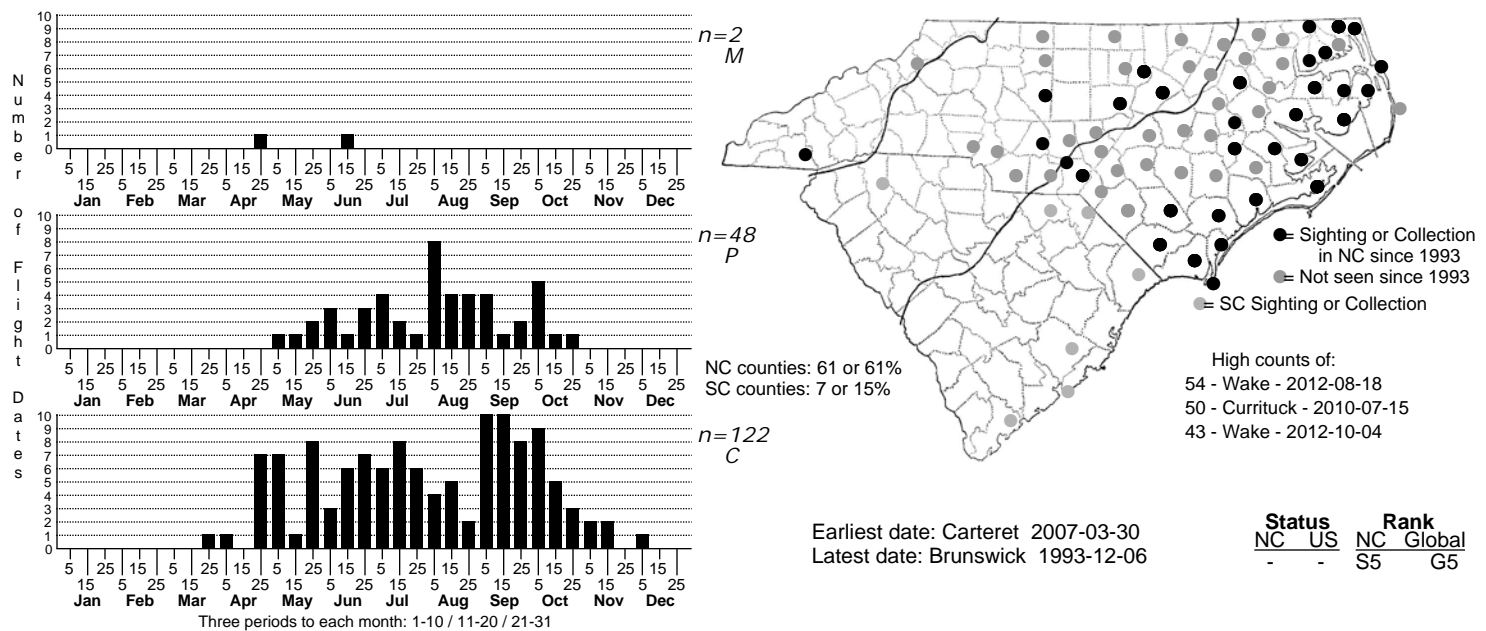
**ABUNDANCE:** Rare to very uncommon, but certainly overlooked in its shady habitat. The peak count of just 8 individuals is indicative of its scarcity, as is its spotty range in the state.

**FLIGHT:** The flight patterns are oddly "bimodal", almost as if a migratory species or one that aestivates in the warmer months. For example, the combined Coastal Plain and Piedmont flights are from late March or early April to the first half of June. There is a major gap until records again appear from late August to mid-November. Where are the individuals in late June, July, and most of August?

**HABITAT:** Streams, swamp edges, and other pools under heavy shade, essentially always under a forest canopy.

**COMMENTS:** This species' odd habitat selection -- shaded waters in forests -- makes it somewhat more difficult to survey for, and observe/photograph -- than other damselflies. This behavior is at least partly responsible for its spotty range in the state.

## *Ischnura ramburii* Rambur's Forktail



**DISTRIBUTION:** Occupies the eastern half of the state, with scattered records in the western Piedmont; only two county records for the mountains. Thus, it is unclear if it occurs statewide, though it certainly is very scarce in the western third of the state.

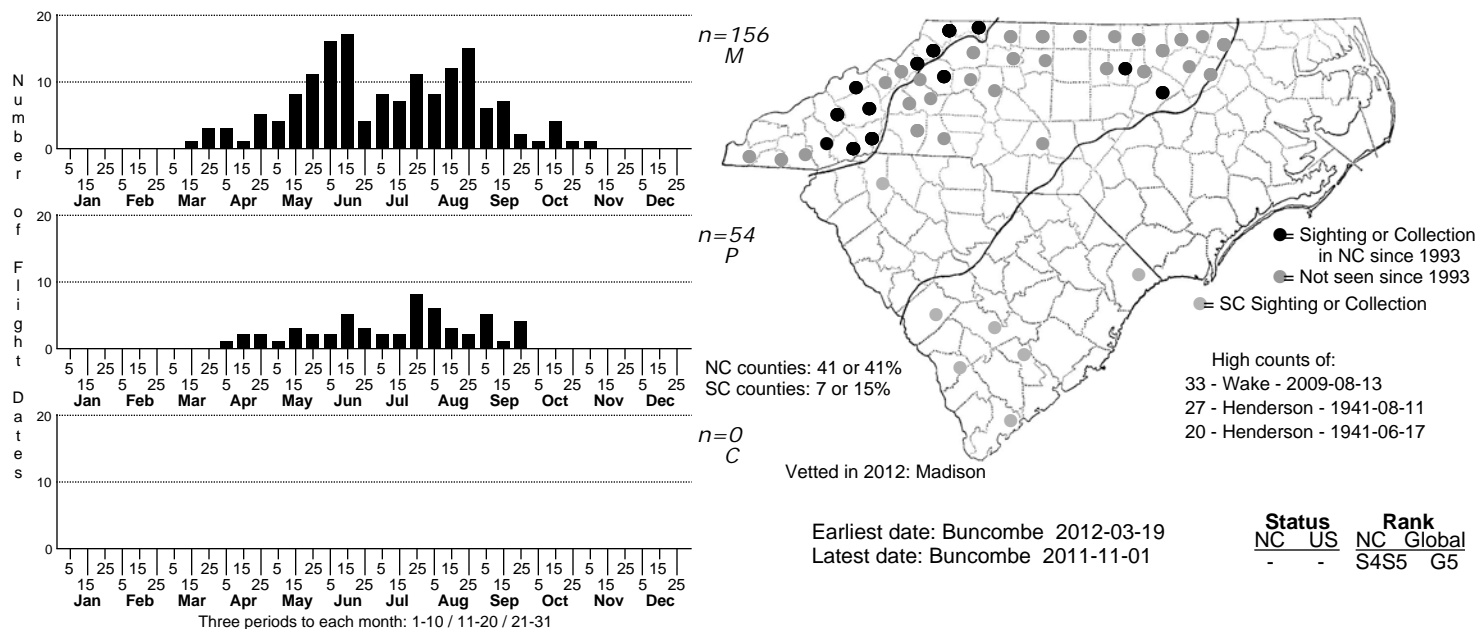
**ABUNDANCE:** Common in the Coastal Plain, particularly around brackish pools along the coast. Generally uncommon in the eastern Piedmont, and very rare to rare farther westward.

**FLIGHT:** The flight is from late March into mid-November, at least in the Coastal Plain, sparingly to early December. In the Piedmont, the flight begins in early May (if not earlier), and ends by late October. The sole mountain flight dates are from late April and mid-June.

**HABITAT:** Bay lakes, haline pools and shores, and heavily vegetated ponds.

**COMMENTS:** This is one of the few damselflies that is quite common along and near the immediate coast. The range in the western half of the state still needs much elucidation.

## *Ischnura verticalis* Eastern Forktail



**DISTRIBUTION:** Throughout the mountains and the northern half of the Piedmont, including most of the foothills counties. Ranges southeast to Halifax, Nash, and Wake counties. The only record for the southeastern Piedmont is for Stanly County. Interestingly, it is reported in many Coastal Plain counties in SC, though Paulson (2011) states "occurrence in coastal South Carolina is in question", as there are no Coastal Plain records for NC or for GA.

**ABUNDANCE:** Common to very common over most or all of the mountains; uncommon to locally fairly common in the Piedmont portion of the range. Whether it is truly absent in the southeastern Piedmont is uncertain.

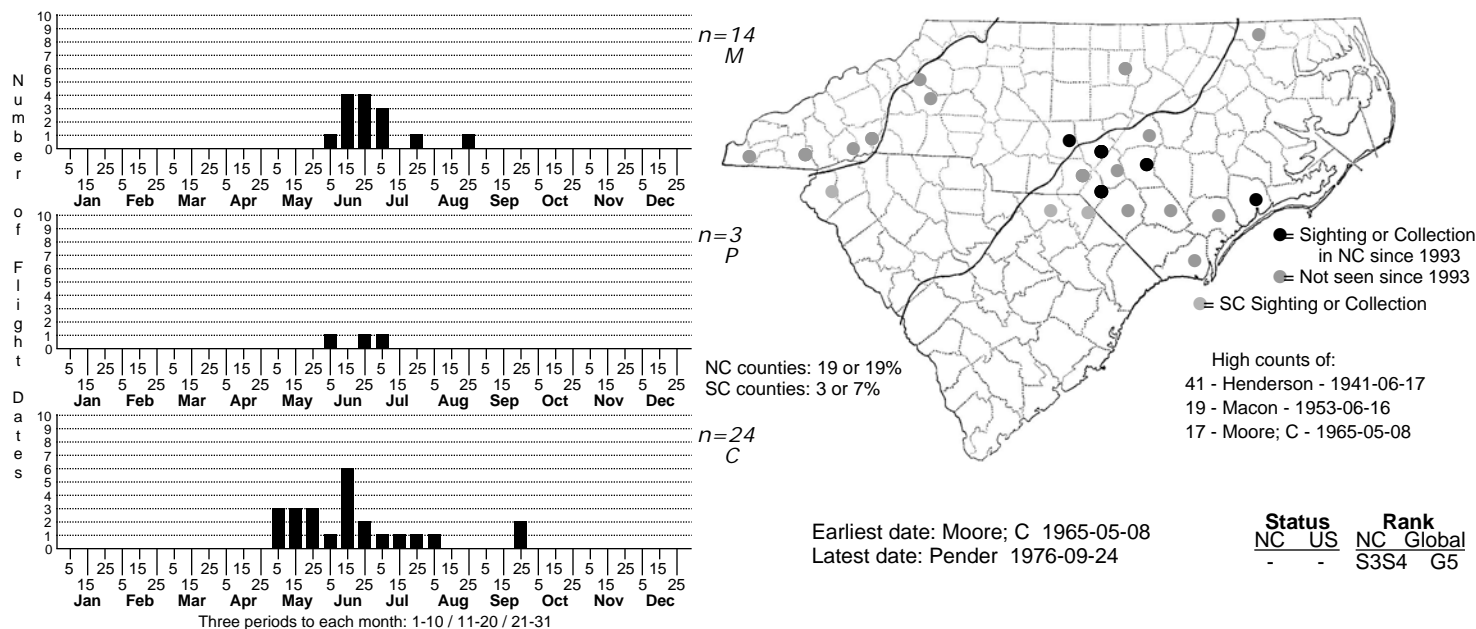
**FLIGHT:** In the mountains, it occurs from mid-March to early November. The Piedmont flight is from early April to late September, but it likely occurs in late March and well into October or early November (as it does so in the cooler mountains).

**HABITAT:** Lakes, ponds, and slower streams, where there is vegetation along the margins.

**COMMENTS:** This is one of the relatively few damselflies that is clearly more common in the mountains than downstate.



## *Nehalennia gracilis* Sphagnum Sprite



**DISTRIBUTION:** Primarily the southern Coastal Plain, including the Sandhills region, as well as the southern mountains. Otherwise, widely scattered over the state, though mainly in the southern part of the state. There are no records yet for the central and northern mountains, nearly all of the Piedmont, and nearly all of the northern Coastal Plain.

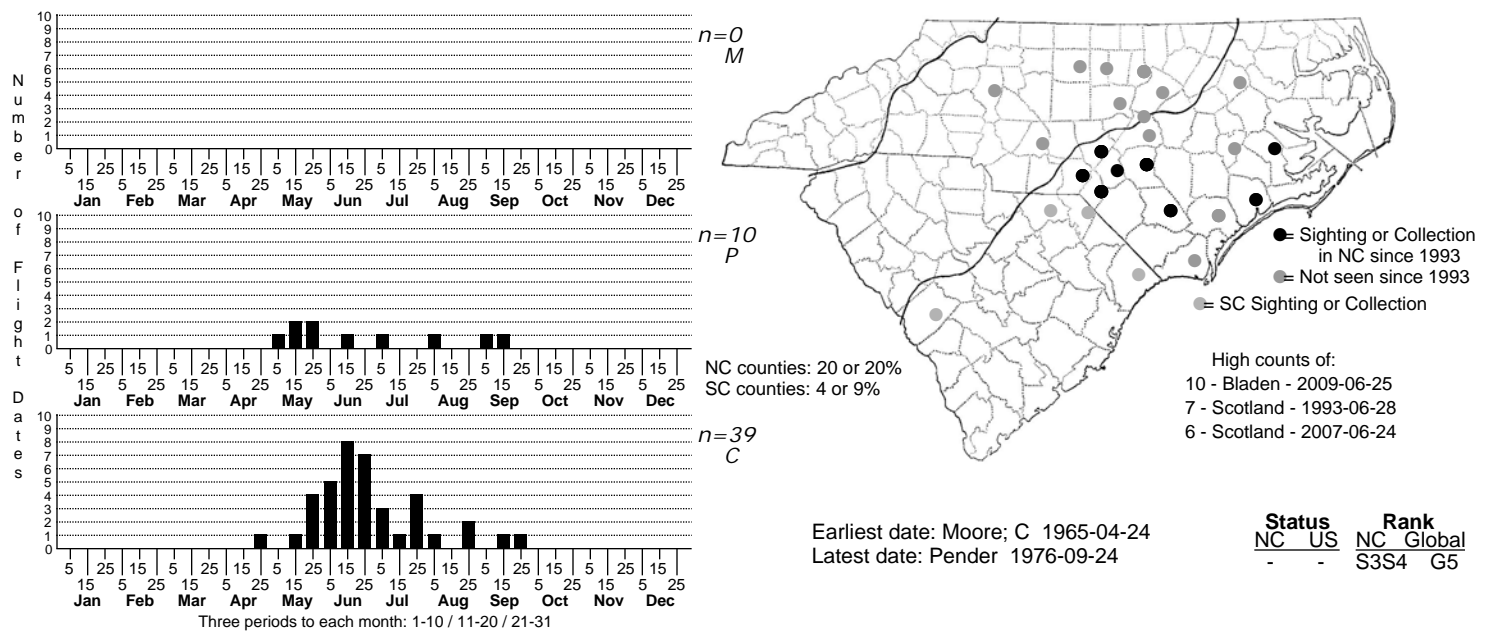
**ABUNDANCE:** Oddly geographically bimodal, being more numerous in the Coastal Plain and the southern mountains than in the Piedmont. Uncommon to fairly common (at least locally) in the Sandhills and in the southern mountains. Very rare to rare elsewhere, mainly in the southern Coastal Plain east of the Sandhills.

**FLIGHT:** The Coastal Plain records fall from early May to late September, whereas those from the mountains are from early June to late August. The very few (three) records from the Piedmont are confined from early June to early July, though certainly the flight is much wider than this.

**HABITAT:** Typically where sphagnum moss is present around seeps and other boggy spots, such as some pond margins.

**COMMENTS:** Because of the sparse array of county records across much of the state, range maps in reference books tend to show all of NC within the range of the species, which is more common in states to our north than to our south. Though not one of our rarest damselflies, it is one of our rarest away from its Sandhills stronghold.

## *Nehalennia integricollis* Southern Sprite



**DISTRIBUTION:** Most of the Coastal Plain and the Piedmont; absent from the mountains. Possibly absent from the northeastern Coastal Plain, and likely absent from the Piedmont foothills. However, as it ranges far up the Coastal Plain of the eastern US, the species is likely not absent in the state's Tidewater area.

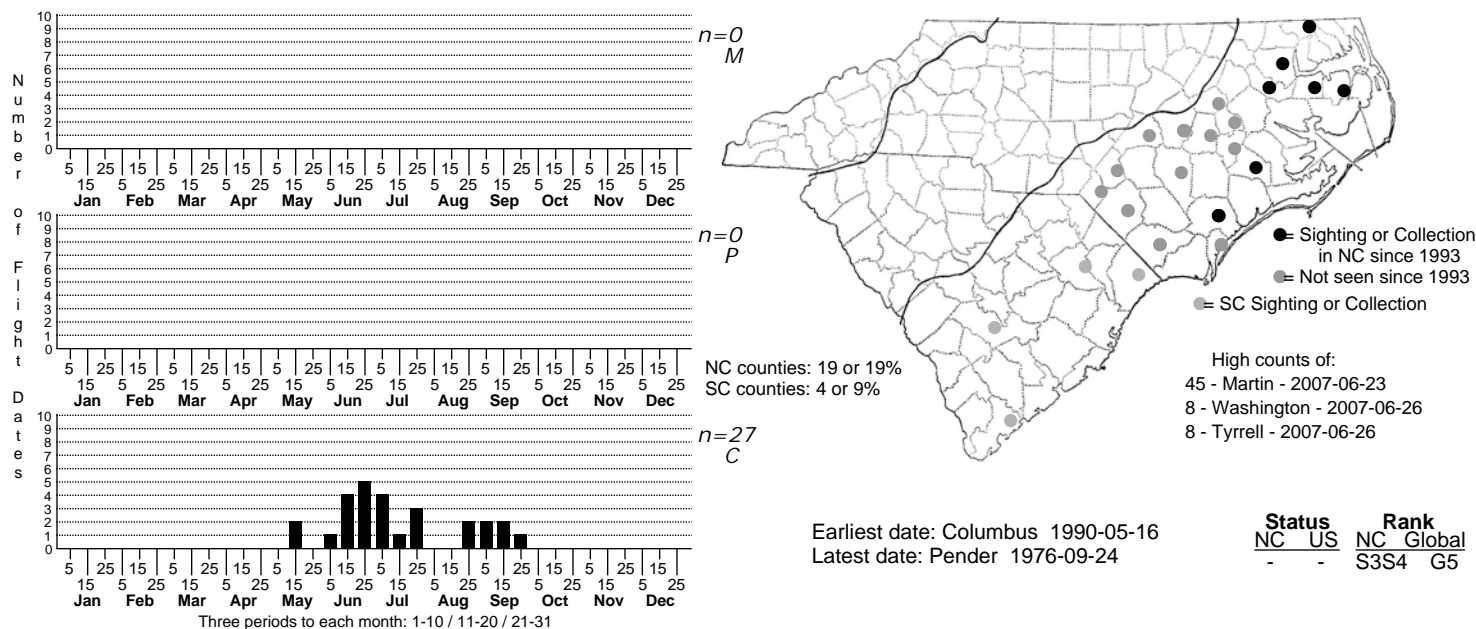
**ABUNDANCE:** Uncommon or easily overlooked in the southern half of the Coastal Plain, north to Craven and Moore counties. Rare in the Piedmont portion of the range, as well as in the northern half of the Coastal Plain. Seemingly very rare to absent in the Tidewater region.

**FLIGHT:** In the Coastal Plain, it flies from late April to late September. The sparse data from the Piedmont are from early May to mid-September.

**HABITAT:** Ponds or lakes, but where there is dense grassy vegetation along the margins, where it can easily hide.

**COMMENTS:** This species is so small that it is easily overlooked amid its dense grassy habitats. In fact, Paulson (2011) says that it "Can be very common in dense vegetation".

## *Telebasis byersi* Duckweed Firetail



**DISTRIBUTION:** Throughout the Coastal Plain, but apparently absent from the adjacent Piedmont. Absent from the mountains. Possibly absent in some coastal counties in the northeastern Coastal Plain.

**ABUNDANCE:** Seemingly local. Apparently rare over much of the Coastal Plain, but can be fairly common in a few places, as witnessed by a one-day count of 45; several other one-day counts are of 8 individuals.

**FLIGHT:** The records fall between mid-May to late September.

**HABITAT:** As the name implies, found mostly at ponds or swampy pools where there are dense stands of duckweeds.

**COMMENTS:** The male is so bright red that, where present, it should be obvious. The lack of recent records from the central and southern Coastal Plain is surprising, if not disturbing. However, there has perhaps been very little recent field work done in appropriate habitat in this region.

**Flag-tailed Spinyleg** *Dromogomphus spoliatus*

This species occurs essentially west of NC, east to eastern TN and the extreme northwestern corner of GA. To be looked for in the extreme southwestern tip of the state. At least one reference lists the species as occurring in NC, but Cuyler has no records; Bick and Mauffray (1997-2004) also does not list NC for this species.

**Northern Pygmy Clubtail** *Lanthus parvulus*

Though this species appeared on some earlier lists of odonates for the state, we were unable to locate specimen records or other documentation for it. In 2012 we received a file of all 17,900 NC specimen records housed at the University of Florida, most of which were contributed by Duncan Cuyler. There were four or five records (from Avery County) for this species listed on this file. However, Bill Mauffray at the Museum photographed these specimens, at our request, sending the photos to others for review. His conclusion, supported by the other reviewers, was that most or all appeared to be Southern Pygmy Clubtails, which also occurs in the general area, though one specimen could possibly be a Northern. The specimens are over 40 years old, and fungus on them has made it difficult to see the crucial lateral stripe pattern on the thorax that might separate the two species. Thus, the species needs to remain on the "reported but lacking confirmation" list (Appendix A), though, of course, at least one specimen might have been correctly identified. Observers should look for the species in the northern mountains in May and June.

**Elusive Clubtail** *Stylurus notatus*

This northern/midwestern species has been attributed to NC by one or more references (including Bick and Mauffray [1997-2004]), and supposedly there is a sight record for Wake County. Cuyler has no record for NC, however. The range certainly approaches NC to the north (VA) and west (TN and n.w. GA), so it is certainly possible that the species occurs in the state. The species is very difficult to study; adults are notoriously difficult to net, as they perch high in treetops and make wide foraging bouts over water, usually far from shore.

**Frosted Whiteface** *Leucorrhinia frigida*

A nymph of this species was reported from a Sandhills site (creek), but the normal range is from northern VA northward. The NC Natural Heritage Program thinks this is a misidentification. The species is not listed for NC in any references, nor does Cuyler have any records.

**Four-spotted Skimmer** *Libellula quadrimaculata*

This is a northern species, occurring in the East southward only to NJ, PA, and OH. It is considered to be abundant, and one reference calls it the most common dragonfly in Canada. It is reported from NC in one or more references -- including Bick and Mauffray (1997-2004), but no data are available, and there are no specimen records from Cuyler.

**Vermilion Saddlebags** *Tamea abdominalis*

This species' range is the West Indies and southern Florida. It strays rarely to eastern states north of FL. At least one reference lists a record for NC, but Cuyler's database contains no NC records. Bick and Mauffray (1997-2004) does not list NC for this species.

**Sedge Sprite** *Nehalennia irene*

This is a northern species, ranging south in the eastern states to VA, WV, and KY. Cuyler has no records, nor are any others known for NC. However, the species is listed for NC in Westfall and May (1996) and Mauffray (2005).

**Listing of NC Odonates  
by number of species (out of 184) per county**

**Appendix B**

Sorted Alpha		Sorted Numeric	
Alamance - 70	Mitchell - 41	Cumberland - 112	Polk - 69
Alexander - 57	Montgomery - 97	Moore - 112	New Hanover - 69
Alleghany - 70	Moore; C - 105	Durham - 112	Avery - 67
Anson - 86	Moore; P - 45	Wake - 112	McDowell - 67
Ashe - 85	Nash - 86	Bladen - 110	Yancey - 67
Avery - 67	New Hanover - 69	Richmond - 110	Cabarrus - 66
Beaufort - 71	Northampton - 83	Harnett - 109	Rowan - 66
Bertie - 72	Onslow - 82	Chatham - 104	Gaston - 66
Bladen - 110	Orange - 99	Scotland - 101	Watauga - 66
Brunswick - 92	Pamlico - 44	Pender - 100	Washington - 65
Brunswick; BHI - 22	Pasquotank - 57	Orange - 99	Surry - 65
Buncombe - 93	Pender - 100	Montgomery - 97	Catawba - 65
Burke; M - 49	Perquimans - 48	Sampson - 96	Iredell - 64
Burke; P - 85	Person - 74	Hoke - 96	Cherokee - 62
Cabarrus - 66	Pitt - 84	Johnston - 94	Lincoln - 61
Caldwell - 80	Polk; M - 2	Buncombe - 93	Carteret - 60
Camden - 58	Polk; P - 68	Franklin - 93	Tyrrell - 58
Carteret - 60	Randolph - 71	Burke - 93	Camden - 58
Caswell - 92	Richmond - 15	Edgecombe - 92	Pasquotank - 57
Catawba - 65	Richmond; C - 98	Brunswick - 92	Alexander - 57
Chatham - 104	Richmond; P - 52	Robeson - 92	Chowan - 56
Cherokee - 62	Robeson - 92	Caswell - 92	Swain - 54
Chowan - 56	Rockingham - 90	Halifax - 91	Clay - 52
Clay - 52	Rowan - 66	Rockingham - 90	Hyde - 52
Cleveland - 71	Rutherford; M - 2	Lee - 88	Jackson - 48
Columbus - 86	Rutherford; P - 70	Nash - 86	Perquimans - 48
Craven - 77	Sampson - 96	Columbus - 86	Pamlico - 44
Cumberland - 112	Scotland - 101	Anson - 86	Mitchell - 41
Currituck - 40	Stanly - 76	Wilkes - 85	Currituck - 40
Dare; Mainland - 35	Stokes - 73	Ashe - 85	Dare - 40
Dare; OBL - 4	Surry - 65	Lenoir - 85	Graham - 26
Dare; OBM - 10	Swain - 54	Macon - 84	
Dare; OBU - 21	Transylvania - 82	Pitt - 84	
Davidson - 71	Tyrrell - 58	Wilson - 84	County splits ignored.
Davie - 76	Union - 76	Northampton - 83	
Duplin - 79	Vance - 73	Transylvania - 82	Number of Counties = 100
Durham - 112	Wake - 112	Onslow - 82	
Edgecombe - 92	Warren - 80	Wayne - 82	
Forsyth - 77	Washington - 65	Yadkin - 81	
Franklin - 93	Watauga - 66	Caldwell - 80	
Gaston - 66	Wayne - 82	Warren - 80	
Gates - 75	Wilkes; M - 17	Duplin - 79	
Graham - 26	Wilkes; P - 83	Jones - 79	
Granville - 78	Wilson - 84	Granville - 78	
Greene - 76	Yadkin - 81	Craven - 77	
Guilford - 75	Yancey - 67	Martin - 77	
Halifax; C - 51		Forsyth - 77	
Halifax; P - 89		Mecklenburg - 77	
Harnett; C - 93	County splits respected.	Henderson - 77	
Harnett; P - 85		Stanly - 76	
Haywood - 70		Union - 76	
Henderson - 77		Davie - 76	
Hertford - 75		Greene - 76	
Hoke - 96		Gates - 75	
Hyde - 52		Guilford - 75	
Iredell - 64		Hertford - 75	
Jackson - 48		Person - 74	
Johnston; C - 94		Vance - 73	
Johnston; P - 26		Stokes - 73	
Jones - 79		Bertie - 72	
Lee - 88		Beaufort - 71	
Lenoir - 85		Randolph - 71	
Lincoln - 61		Cleveland - 71	
Macon - 84		Davidson - 71	
Madison - 71		Madison - 71	
Martin - 77		Haywood - 70	
McDowell; M - 12		Alamance - 70	
McDowell; P - 66		Rutherford - 70	
Mecklenburg - 77		Alleghany - 70	

100 - Common Green Darner	56 - Comet Darner	12 - Septima's Clubtail
100 - Halloween Pennant	56 - Cyrano Darner	12 - Seaside Dragonlet
100 - Eastern Pondhawk	54 - Selys's Sundragon	11 - Spine-crowned Clubtail
100 - Slaty Skimmer	54 - Umber Shadowdragon	11 - Cocoa Clubtail
100 - Blue Dasher	54 - Clamp-tipped Emerald	10 - Shining Clubtail
100 - Common Whitetail	46 - Royal River Cruiser	10 - Smoky Shadowdragon
100 - Fragile Forktail	46 - Elegant Spreadwing	9 - Regal Darner
99 - Common Baskettail	46 - Seepage Dancer	9 - Sable Clubtail
99 - Citrine Forktail	44 - Blackwater Bluet	9 - Maine Snaketail
98 - Eastern Amberwing	43 - Fine-lined Emerald	9 - Mountain River Cruiser
97 - Orange Bluet	43 - American Rubyspot	9 - Elfin Skimmer
96 - Widow Skimmer	42 - Swift Setwing	9 - Superb Jewelwing
96 - Wandering Glider	41 - Brown Spiketail	9 - Cherry Bluet
96 - Autumn Meadowhawk	41 - Attenuated Bluet	9 - Sandhill Bluet
96 - Carolina Saddlebags	41 - Eastern Forktail	9 - Hagen's Bluet
96 - Black Saddlebags	40 - Double-ringed Pennant	8 - Southeastern Spinyleg
96 - Ebony Jewelwing	39 - Taper-tailed Darner	8 - Diminutive Clubtail
94 - Painted Skimmer	38 - Slender Baskettail	8 - Sweetflag Spreadwing
94 - Variable Dancer	38 - Atlantic Bluet	7 - Ocellated Darner
93 - Calico Pennant	36 - Gray Petaltail	7 - Zebra Clubtail
93 - Great Blue Skimmer	36 - Laura's Clubtail	7 - Ski-tipped Emerald
93 - Familiar Bluet	36 - Eastern Red Damsel	6 - Mustached Clubtail
92 - Swamp Darner	35 - Allegheny River Cruiser	6 - Splendid Clubtail
92 - Banded Pennant	35 - Red-veined Pennant	6 - Cinnamon Shadowdragon
92 - Blue-fronted Dancer	34 - Eastern Least Clubtail	6 - Marl Pennant
91 - Fawn Darner	34 - Aurora Damsel	6 - Carolina Spreadwing
91 - Lancet Clubtail	32 - Mantled Baskettail	4 - Phantom Darner
91 - Prince Baskettail	30 - Robust Baskettail	4 - Skillet Clubtail
91 - Spangled Skimmer	30 - Ornate Pennant	4 - Green-faced Clubtail
91 - Blue-tipped Dancer	30 - Ruby Meadowhawk	3 - Clearlake Clubtail
90 - Southern Spreadwing	29 - Coppery Emerald	3 - Rapids Clubtail
88 - Double-striped Bluet	29 - Pale Bluet	3 - Brook Snaketail
87 - Spot-winged Glider	28 - Vesper Bluet	3 - Edmund's Snaketail
85 - Ashy Clubtail	27 - Burgundy Bluet	3 - Stygian Shadowdragon
85 - Stream Cruiser	25 - Four-spotted Pennant	3 - White-faced Meadowhawk
85 - Blue Corporal	25 - Great Spreadwing	3 - Striped Saddlebags
84 - Swamp Spreadwing	24 - Amanda's Pennant	2 - Black-tipped Darner
84 - Turquoise Bluet	23 - Appalachian Snaketail	2 - Green-striped Darner
83 - Swift River Cruiser	23 - Furtive Forktail	2 - Sandhill Clubtail
83 - Skimming Bluet	22 - Needham's Skimmer	2 - Cherokee Clubtail
81 - Springtime Darner	22 - Lilypad Forktail	2 - Harpoon Clubtail
80 - Little Blue Dragonlet	21 - Uhler's Sundragon	2 - Midland Clubtail
79 - Slender Bluet	21 - Treetop Emerald	2 - Pygmy Snaketail
77 - Slender Spreadwing	21 - Appalachian Jewelwing	2 - Townes's Clubtail
77 - Powdered Dancer	21 - Big Bluet	2 - Spotted Spreadwing
76 - Black-shouldered Spinyleg	20 - Piedmont Clubtail	1 - Gray-green Clubtail
76 - Blue-ringed Dancer	20 - Southern Sprite	1 - Beaverpond Clubtail
75 - Dragonhunter	19 - Tiger Spiketail	1 - Northern Pygmy Clubtail
74 - Golden-winged Skimmer	19 - Sphagnum Sprite	1 - Rusty Snaketail
73 - Common Sanddragon	19 - Duckweed Firetail	1 - Belle's Sanddragon
72 - Blue-faced Meadowhawk	18 - Unicorn Clubtail	1 - Interior Least Clubtail
70 - Yellow-sided Skimmer	18 - Eastern Ringtail	1 - American Emerald
70 - Twelve-spotted Skimmer	18 - Blackwater Clubtail	1 - Chalk-fronted Corporal
70 - Sparkling Jewelwing	18 - Riverine Clubtail	1 - Variegated Meadowhawk
67 - Bar-winged Skimmer	18 - Arrow Clubtail	1 - Cherry-faced Meadowhawk
65 - Twin-spotted Spiketail	17 - Two-striped Forceptail	1 - Little Bluet
63 - Russet-tipped Clubtail	17 - Banner Clubtail	1 - Golden Bluet
63 - Mocha Emerald	17 - Cobra Clubtail	
61 - Smoky Rubyspot	17 - Southern Pygmy Clubtail	
61 - Rambur's Forktail	17 - Alabama Shadowdragon	
60 - Azure Bluet	17 - Amber-winged Spreadwing	
60 - Stream Bluet	16 - Roseate Skimmer	
59 - Shadow Darner	16 - Band-winged Meadowhawk	
57 - Harlequin Darner	14 - Arrowhead Spiketail	
57 - Dusky Dancer	13 - Red Saddlebags	

Mountain	Piedmont	Coastal Plain
131 species	150 species	148 species
DRAGONFLIES - 76	DRAGONFLIES - 95	DRAGONFLIES - 92
Gray Petaltail	Gray Petaltail	Gray Petaltail
Tiger Spiketail	Tiger Spiketail	Tiger Spiketail
Twin-spotted Spiketail	Twin-spotted Spiketail	Twin-spotted Spiketail
Black-shouldered Spinyleg	Arrowhead Spiketail	Arrowhead Spiketail
Eastern Ringtail	Two-striped Forceptail	Two-striped Forceptail
Splendid Clubtail	Black-shouldered Spinyleg	Southeastern Spinyleg
Sable Clubtail	Eastern Ringtail	Black-shouldered Spinyleg
Cobra Clubtail	Cherokee Clubtail	Eastern Ringtail
Beaverpond Clubtail	Blackwater Clubtail	Blackwater Clubtail
Harpoon Clubtail	Splendid Clubtail	Septima's Clubtail
Lancet Clubtail	Sable Clubtail	Cobra Clubtail
Ashy Clubtail	Septima's Clubtail	Clearlake Clubtail
Mustached Clubtail	Cobra Clubtail	Sandhill Clubtail
Piedmont Clubtail	Skillet Clubtail	Diminutive Clubtail
Green-faced Clubtail	Diminutive Clubtail	Lancet Clubtail
Dragonhunter	Lancet Clubtail	Ashy Clubtail
Southern Pygmy Clubtail	Ashy Clubtail	Spine-crowned Clubtail
Eastern Least Clubtail	Spine-crowned Clubtail	Banner Clubtail
Brook Snaketail	Banner Clubtail	Piedmont Clubtail
Pygmy Snaketail	Piedmont Clubtail	Dragonhunter
Appalachian Snaketail	Dragonhunter	Eastern Least Clubtail
Maine Snaketail	Southern Pygmy Clubtail	Appalachian Snaketail
Common Sanddragon	Eastern Least Clubtail	Belle's Sanddragon
Black-tipped Darner	Edmund's Snaketail	Common Sanddragon
Shadow Darner	Appalachian Snaketail	Shadow Darner
Green-striped Darner	Maine Snaketail	Common Green Darner
Common Green Darner	Common Sanddragon	Comet Darner
Comet Darner	Shadow Darner	Springtime Darner
Springtime Darner	Common Green Darner	Fawn Darner
Ocellated Darner	Comet Darner	Regal Darner
Fawn Darner	Springtime Darner	Swamp Darner
Swamp Darner	Ocellated Darner	Taper-tailed Darner
Stream Cruiser	Fawn Darner	Harlequin Darner
Allegheny River Cruiser	Regal Darner	Cyrano Darner
Swift River Cruiser	Swamp Darner	Phantom Darner
Mountain River Cruiser	Taper-tailed Darner	Stream Cruiser
Prince Baskettail	Harlequin Darner	Allegheny River Cruiser
Slender Baskettail	Cyrano Darner	Swift River Cruiser
Common Baskettail	Stream Cruiser	Royal River Cruiser
Uhler's Sundragon	Allegheny River Cruiser	Prince Baskettail
Ski-tipped Emerald	Swift River Cruiser	Slender Baskettail
Fine-lined Emerald	Mountain River Cruiser	Common Baskettail
Clamp-tipped Emerald	Royal River Cruiser	Mantled Baskettail
Red-veined Pennant	Prince Baskettail	Robust Baskettail
Calico Pennant	Slender Baskettail	Selys's Sundragon
Halloween Pennant	Common Baskettail	Uhler's Sundragon
Banded Pennant	Mantled Baskettail	Alabama Shadowdragon
Ornate Pennant	Robust Baskettail	Smoky Shadowdragon
Double-ringed Pennant	Selys's Sundragon	Umber Shadowdragon
Swift Setwing	Uhler's Sundragon	Fine-lined Emerald
Eastern Pondhawk	Alabama Shadowdragon	Coppery Emerald
Little Blue Dragonlet	Smoky Shadowdragon	Mocha Emerald
Golden-winged Skimmer	Umber Shadowdragon	Treetop Emerald
Bar-winged Skimmer	Cinnamon Shadowdragon	Clamp-tipped Emerald
Spangled Skimmer	Fine-lined Emerald	Four-spotted Pennant

Mountain	Piedmont	Coastal Plain
Yellow-sided Skimmer	Coppery Emerald	Amanda's Pennant
Slaty Skimmer	Mocha Emerald	Red-veined Pennant
Widow Skimmer	Treetop Emerald	Calico Pennant
Twelve-spotted Skimmer	Clamp-tipped Emerald	Halloween Pennant
Painted Skimmer	Amanda's Pennant	Banded Pennant
Great Blue Skimmer	Red-veined Pennant	Ornate Pennant
Common Whitetail	Calico Pennant	Double-ringed Pennant
Blue Corporal	Halloween Pennant	Swift Setwing
Roseate Skimmer	Banded Pennant	Eastern Pondhawk
Blue Dasher	Ornate Pennant	Seaside Dragonlet
Wandering Glider	Double-ringed Pennant	Little Blue Dragonlet
Spot-winged Glider	Swift Setwing	Golden-winged Skimmer
Eastern Amberwing	Eastern Pondhawk	Bar-winged Skimmer
Blue-faced Meadowhawk	Little Blue Dragonlet	Spangled Skimmer
White-faced Meadowhawk	Golden-winged Skimmer	Yellow-sided Skimmer
Ruby Meadowhawk	Bar-winged Skimmer	Slaty Skimmer
Band-winged Meadowhawk	Spangled Skimmer	Widow Skimmer
Autumn Meadowhawk	Yellow-sided Skimmer	Needham's Skimmer
Carolina Saddlebags	Slaty Skimmer	Twelve-spotted Skimmer
Black Saddlebags	Widow Skimmer	Painted Skimmer
Red Saddlebags	Needham's Skimmer	Great Blue Skimmer
Superb Jewelwing	Twelve-spotted Skimmer	Common Whitetail
DAMSELFLIES - 54 species	Painted Skimmer	Blue Corporal
Appalachian Jewelwing	Great Blue Skimmer	Marl Pennant
Sparkling Jewelwing	Common Whitetail	Elfin Skimmer
Ebony Jewelwing	Blue Corporal	Roseate Skimmer
American Rubyspot	Elfin Skimmer	Blue Dasher
Smoky Rubyspot	Roseate Skimmer	Wandering Glider
Elegant Spreadwing	Blue Dasher	Spot-winged Glider
Sweetflag Spreadwing	Wandering Glider	Eastern Amberwing
Southern Spreadwing	Spot-winged Glider	Blue-faced Meadowhawk
Amber-winged Spreadwing	Eastern Amberwing	Variegated Meadowhawk
Slender Spreadwing	Blue-faced Meadowhawk	Autumn Meadowhawk
Swamp Spreadwing	Ruby Meadowhawk	Striped Saddlebags
Seepage Dancer	Band-winged Meadowhawk	Carolina Saddlebags
Blue-tipped Dancer	Autumn Meadowhawk	Black Saddlebags
Blue-fronted Dancer	Striped Saddlebags	Red Saddlebags
Powdered Dancer	Carolina Saddlebags	DAMSELFLIES - 56 species
Blue-ringed Dancer	Black Saddlebags	Appalachian Jewelwing
Dusky Dancer	Red Saddlebags	Sparkling Jewelwing
Slender Bluet	DAMSELFLIES - 55 species	Ebony Jewelwing
Attenuated Bluet	Appalachian Jewelwing	American Rubyspot
Azure Bluet	Sparkling Jewelwing	Smoky Rubyspot
Double-striped Bluet	Ebony Jewelwing	Elegant Spreadwing
Familiar Bluet	American Rubyspot	Sweetflag Spreadwing
Turquoise Bluet	Smoky Rubyspot	Southern Spreadwing
Atlantic Bluet	Elegant Spreadwing	Slender Spreadwing
Stream Bluet	Sweetflag Spreadwing	Swamp Spreadwing
Skimming Bluet	Southern Spreadwing	Carolina Spreadwing
Hagen's Bluet	Amber-winged Spreadwing	Seepage Dancer
Orange Bluet	Slender Spreadwing	Blue-tipped Dancer
Vesper Bluet	Swamp Spreadwing	Blue-fronted Dancer
Lilypad Forktail	Seepage Dancer	Powdered Dancer
Fragile Forktail	Blue-tipped Dancer	Blue-ringed Dancer
Rambur's Forktail	Blue-fronted Dancer	Dusky Dancer
Eastern Forktail	Powdered Dancer	Slender Bluet
Citrine Forktail	Blue-ringed Dancer	Attenuated Bluet



Mountain	Piedmont	Coastal Plain
Sphagnum Sprite	Dusky Dancer	Little Bluet
Great Spreadwing	Slender Bluet	Azure Bluet
Aurora Damsel	Attenuated Bluet	Double-striped Bluet
Riverine Clubtail	Azure Bluet	Familiar Bluet
Laura's Clubtail	Double-striped Bluet	Cherry Bluet
Russet-tipped Clubtail	Familiar Bluet	Turquoise Bluet
Zebra Clubtail	Turquoise Bluet	Atlantic Bluet
Arrow Clubtail	Atlantic Bluet	Burgundy Bluet
Unicorn Clubtail	Burgundy Bluet	Big Bluet
Brown Spiketail	Big Bluet	Stream Bluet
Variable Dancer	Stream Bluet	Skimming Bluet
Rusty Snaketail	Skimming Bluet	Pale Bluet
American Emerald	Hagen's Bluet	Orange Bluet
Stygian Shadowdragon	Pale Bluet	Vesper Bluet
Spotted Spreadwing	Orange Bluet	Blackwater Bluet
Eastern Red Damsel	Vesper Bluet	Sandhill Bluet
Rapids Clubtail	Blackwater Bluet	Golden Bluet
Chalk-fronted Corporal	Lilypad Forktail	Lilypad Forktail
Cherry-faced Meadowhawk	Fragile Forktail	Fragile Forktail
	Furtive Forktail	Furtive Forktail
	Rambur's Forktail	Rambur's Forktail
	Eastern Forktail	Citrine Forktail
	Citrine Forktail	Southern Sprite
	Southern Sprite	Sphagnum Sprite
	Sphagnum Sprite	Riverine Clubtail
	Great Spreadwing	Shining Clubtail
	Aurora Damsel	Laura's Clubtail
	Riverine Clubtail	Russet-tipped Clubtail
	Laura's Clubtail	Townes's Clubtail
	Russet-tipped Clubtail	Gray-green Clubtail
	Zebra Clubtail	Unicorn Clubtail
	Arrow Clubtail	Duckweed Firetail
	Unicorn Clubtail	Brown Spiketail
	Brown Spiketail	Variable Dancer
	Variable Dancer	Cocoa Clubtail
	Midland Clubtail	Eastern Red Damsel
	Cocoa Clubtail	Interior Least Clubtail
	Eastern Red Damsel	
	Rapids Clubtail	

**Checklist of North Carolina Odonates  
sorted by State Rank**

Species with NC Rank = S1		Species with NC Rank = S2	
AESHNIDAE		LESTIDAE	
___ Green-striped Darner	S1	___ Sweetflag Spreadwing	S2S3
___ Phantom Darner	S1?	___ Carolina Spreadwing	S2?
GOMPHIDAE		Species with NC Rank = S3	
___ Gray-green Clubtail	S1	GOMPHIDAE	
___ Mustached Clubtail	S1S2	___ Two-striped Forceptail	S3
___ Clearlake Clubtail	S1	___ Unicorn Clubtail	S3
___ Sandhill Clubtail	S1	___ Southeastern Spinyleg	S3
___ Cherokee Clubtail	S1?	___ Eastern Ringtail	S3
___ Midland Clubtail	S1	___ Spine-crowned Clubtail	S3
___ Rapids Clubtail	S1?	___ Banner Clubtail	S3?
___ Skillet Clubtail	S1S2	___ Blackwater Clubtail	S3?
___ Green-faced Clubtail	S1	___ Diminutive Clubtail	S3S4
___ Brook Snaketail	S1	___ Cocoa Clubtail	S3
___ Edmund's Snaketail	S1	___ Piedmont Clubtail	S3?
___ Pygmy Snaketail	S1	___ Cobra Clubtail	S3S4
___ Rusty Snaketail	S1	___ Appalachian Snaketail	S3
___ Belle's Sanddragon	S1	___ Eastern Least Clubtail	S3S4
MACROMIIDAE		___ Riverine Clubtail	S3
___ Mountain River Cruiser	S1S2	___ Arrow Clubtail	S3S4
CORDULIIDAE		CORDULEGASTRIDAE	
___ American Emerald	S1	___ Tiger Spiketail	S3
___ Stygian Shadowdragon	S1?	___ Arrowhead Spiketail	S3
LIBELLULIDAE		MACROMIIDAE	
___ Chalk-fronted Corporal	S1	___ Allegheny River Cruiser	S3S4
___ White-faced Meadowhawk	S1	CORDULIIDAE	
LESTIDAE		___ Robust Baskettail	S3S4
___ Spotted Spreadwing	S1	___ Uhler's Sundragon	S3S4
COENAGRIONIDAE		___ Alabama Shadowdragon	S3?
___ Little Bluet	S1	___ Smoky Shadowdragon	S3?
Species with NC Rank = S2		___ Cinnamon Shadowdragon	S3?
AESHNIDAE		___ Treetop Emerald	S3?
___ Ocellated Darner	S2?	LIBELLULIDAE	
___ Regal Darner	S2?	___ Elfin Skimmer	S3S4
GOMPHIDAE		___ Roseate Skimmer	S3S4
___ Splendid Clubtail	S2	___ Band-winged Meadowhawk	S3S4
___ Sable Clubtail	S2S3	CALOPTERYGIDAE	
___ Septima's Clubtail	S2	___ Appalachian Jewelwing	S3S4
___ Maine Snaketail	S2S3	LESTIDAE	
___ Shining Clubtail	S2S3	___ Great Spreadwing	S3S4
___ Zebra Clubtail	S2?	___ Amber-winged Spreadwing	S3
CORDULIIDAE		COENAGRIONIDAE	
___ Ski-tipped Emerald	S2S3	___ Cherry Bluet	S3?
___ Coppery Emerald	S2?	___ Sandhill Bluet	S3?
LIBELLULIDAE		___ Hagen's Bluet	S3?
___ Marl Pennant	S2S3	___ Lilypad Forktail	S3S4
CALOPTERYGIDAE		___ Furtive Forktail	S3S4
___ Superb Jewelwing	S2?		

**Checklist of North Carolina Odonates  
sorted by State Rank**

**Appendix E**

Species with NC Rank = S3		Species with NC Rank = S5	
COENAGRIONIDAE		AESHNIDAE	
___ Sphagnum Sprite	S3S4	___ Shadow Darner	S5
___ Southern Sprite	S3S4	___ Common Green Darner	S5
___ Duckweed Firetail	S3S4	___ Springtime Darner	S5
Species with NC Rank = S4		___ Fawn Darner	S5
PETALURIDAE		___ Swamp Darner	S5
___ Gray Petaltail	S4	GOMPHIDAE	
AESHNIDAE		___ Black-shouldered Spinyleg	S5
___ Comet Darner	S4	___ Lancet Clubtail	S5
___ Taper-tailed Darner	S4	___ Ashy Clubtail	S5
___ Harlequin Darner	S4S5	___ Dragonhunter	S5
___ Cyrano Darner	S4S5	___ Common Sanddragon	S5
GOMPHIDAE		CORDULEGASTRIDAE	
___ Southern Pygmy Clubtail	S4	___ Twin-spotted Spiketail	S5
___ Laura's Clubtail	S4	MACROMIIDAE	
___ Russet-tipped Clubtail	S4S5	___ Stream Cruiser	S5
CORDULEGASTRIDAE		___ Swift River Cruiser	S5
___ Brown Spiketail	S4	CORDULIIDAE	
MACROMIIDAE		___ Common Baskettail	S5
___ Royal River Cruiser	S4	___ Prince Baskettail	S5
CORDULIIDAE		___ Mantled Baskettail	S5
___ Slender Baskettail	S4	___ Mocha Emerald	S5
___ Selys's Sundragon	S4	LIBELLULIDAE	
___ Umber Shadowdragon	S4	___ Four-spotted Pennant	S5
___ Fine-lined Emerald	S4	___ Amanda's Pennant	S5
___ Clamp-tipped Emerald	S4S5	___ Calico Pennant	S5
LIBELLULIDAE		___ Halloween Pennant	S5
___ Red-veined Pennant	S4	___ Banded Pennant	S5
___ Double-ringed Pennant	S4	___ Ornate Pennant	S5
___ Swift Setwing	S4S5	___ Eastern Pondhawk	S5
___ Yellow-sided Skimmer	S4S5	___ Seaside Dragonlet	S5
___ Twelve-spotted Skimmer	S4	___ Little Blue Dragonlet	S5
___ Ruby Meadowhawk	S4	___ Blue Corporal	S5
CALOPTERYGIDAE		___ Golden-winged Skimmer	S5
___ American Rubyspot	S4S5	___ Bar-winged Skimmer	S5
COENAGRIONIDAE		___ Spangled Skimmer	S5
___ Eastern Red Damsel	S4?	___ Slaty Skimmer	S5
___ Seepage Dancer	S4	___ Widow Skimmer	S5
___ Aurora Damsel	S4?	___ Needham's Skimmer	S5
___ Attenuated Bluet	S4	___ Painted Skimmer	S5
___ Burgundy Bluet	S4S5	___ Great Blue Skimmer	S5
___ Big Bluet	S4S5	___ Blue Dasher	S5
___ Pale Bluet	S4?	___ Wandering Glider	S5
___ Vesper Bluet	S4?	___ Spot-winged Glider	S5
___ Eastern Forktail	S4S5	___ Eastern Amberwing	S5
		___ Common Whitetail	S5
		___ Blue-faced Meadowhawk	S5
		___ Autumn Meadowhawk	S5
		___ Carolina Saddlebags	S5
		___ Black Saddlebags	S5

Species with NC Rank = S5		Species with NC Rank = SR	
CALOPTERYGIDAE		GOMPHIDAE	
___ Sparkling Jewelwing	S5	___ Flag-tailed Spinyleg	SR
___ Ebony Jewelwing	S5	___ Elusive Clubtail	SR
___ Smoky Rubyspot	S5	LIBELLULIDAE	
LESTIDAE		___ Frosted Whiteface	SR
___ Southern Spreadwing	S5	___ Four-spotted Skimmer	SR
___ Elegant Spreadwing	S5	___ Vermilion Saddlebags	SR
___ Slender Spreadwing	S5	COENAGRIONIDAE	
___ Swamp Spreadwing	S5	___ Golden Bluet	SR
COENAGRIONIDAE		___ Sedge Sprite	SR
___ Blue-fronted Dancer	S5	Species with NC Rank = SU	
___ Variable Dancer	S5	GOMPHIDAE	
___ Powdered Dancer	S5	___ Interior Least Clubtail	SU
___ Blue-ringed Dancer	S5	LIBELLULIDAE	
___ Blue-tipped Dancer	S5	___ Cherry-faced Meadowhawk	SU
___ Dusky Dancer	S5	See Page vi of the Table of Contents for explanation of codes.	
___ Azure Bluet	S5		
___ Double-striped Bluet	S5		
___ Familiar Bluet	S5		
___ Turquoise Bluet	S5		
___ Atlantic Bluet	S5		
___ Stream Bluet	S5		
___ Skimming Bluet	S5		
___ Orange Bluet	S5		
___ Slender Bluet	S5		
___ Blackwater Bluet	S5		
___ Citrine Forktail	S5		
___ Fragile Forktail	S5		
___ Rambur's Forktail	S5		
Species with NC Rank = SA			
LIBELLULIDAE			
___ Variegated Meadowhawk	SA		
___ Striped Saddlebags	SA		
___ Red Saddlebags	SA		
Species with NC Rank = SH			
AESHNIDAE			
___ Black-tipped Darner	SH		
GOMPHIDAE			
___ Beaverpond Clubtail	SH		
___ Harpoon Clubtail	SH		
___ Northern Pygmy Clubtail	SH		
___ Townes's Clubtail	SH		